



# International Space Station Malfunctions Checklist

## ISS-3A

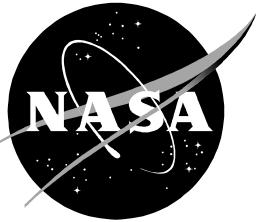
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**Mission Operations Directorate  
Operations Division**

**Preliminary, Rev B  
April 17, 1998**

National Aeronautics and  
Space Administration

**Lyndon B. Johnson Space Center**  
Houston, Texas



**INTERNATIONAL SPACE STATION  
MALFUNCTIONS CHECKLIST  
ISS-3A**

PRELIMINARY, REVISION B  
April 17, 1998

APPROVED BY:

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*Deferred until Final*  
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This document is not currently under the configuration control of the Systems Operations Data File Control Board (SODFCB). During the interim, changes may be submitted directly to the appropriate file manager.

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## MALFUNCTION PROCEDURES

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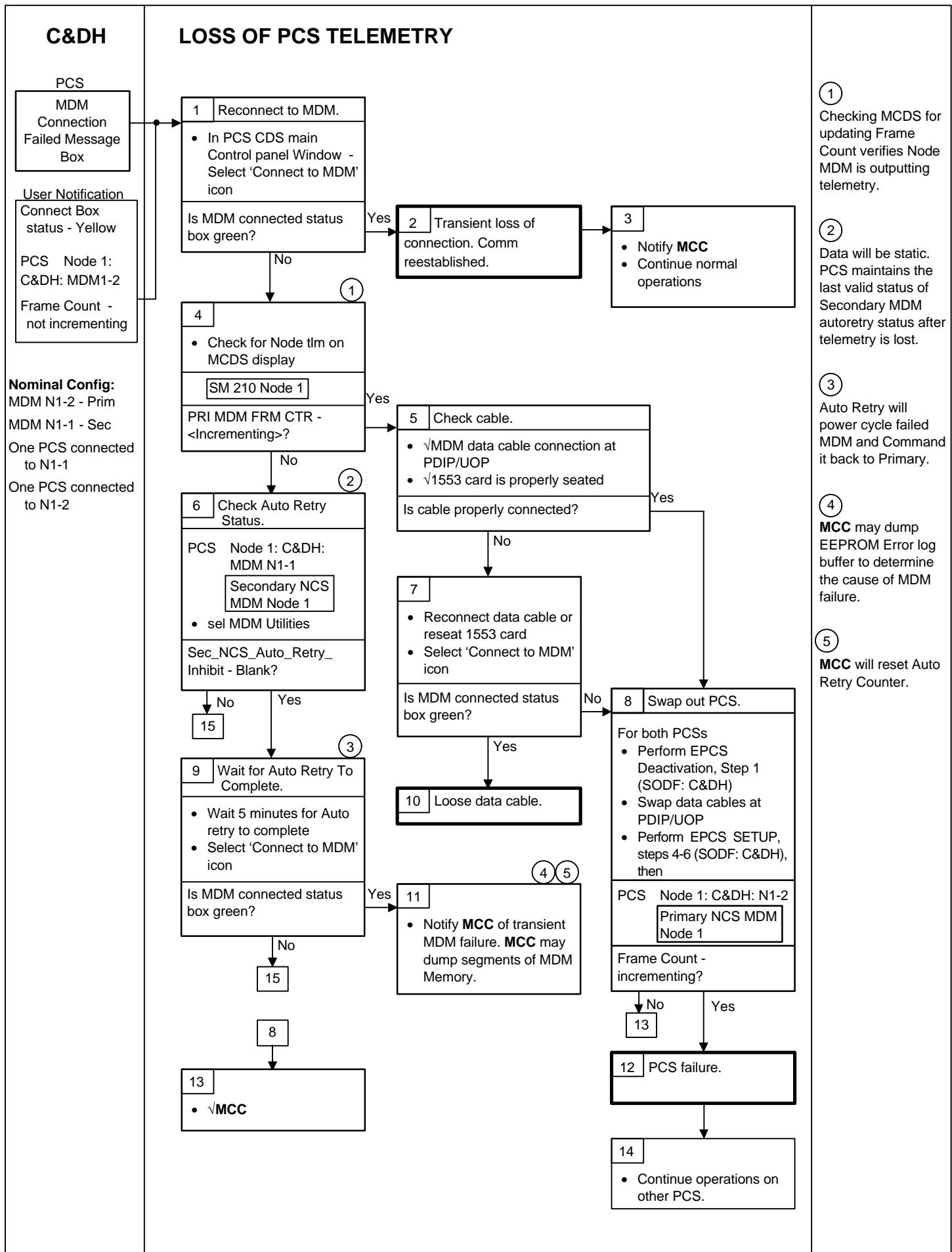
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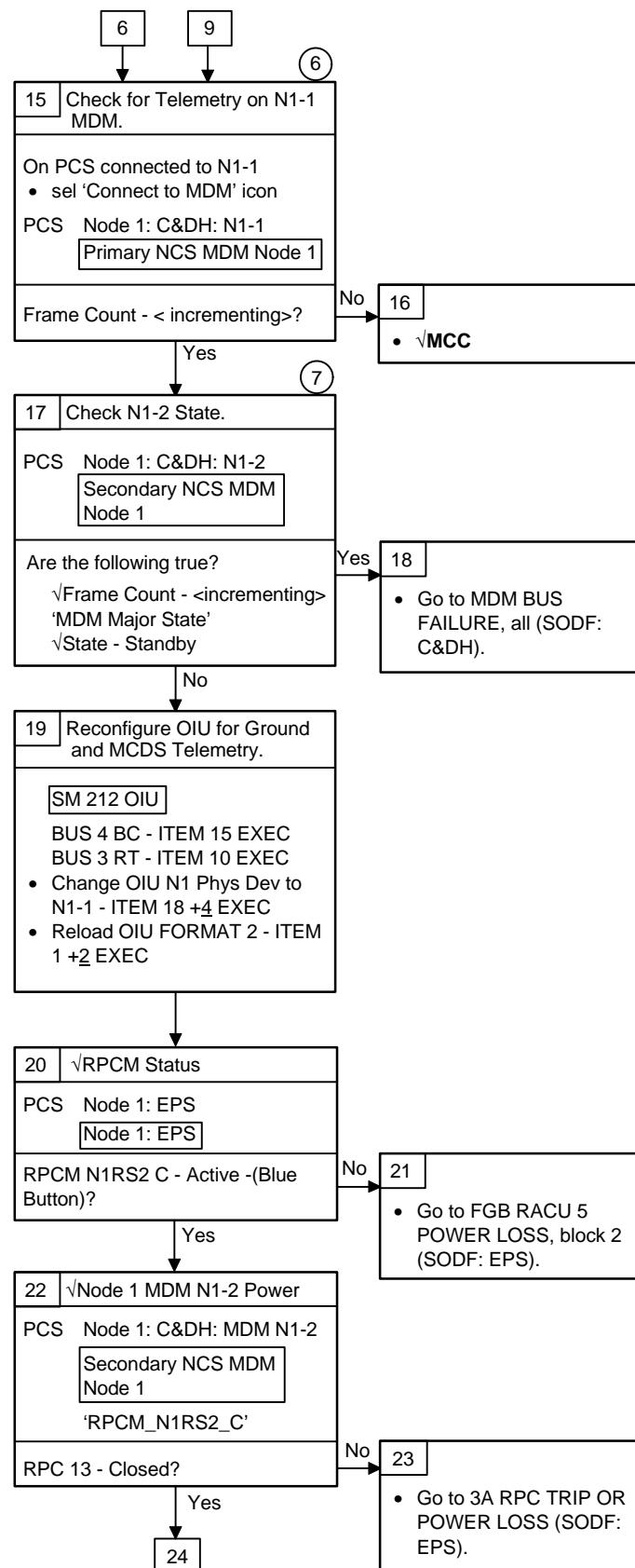
C&DH

**C&DH**

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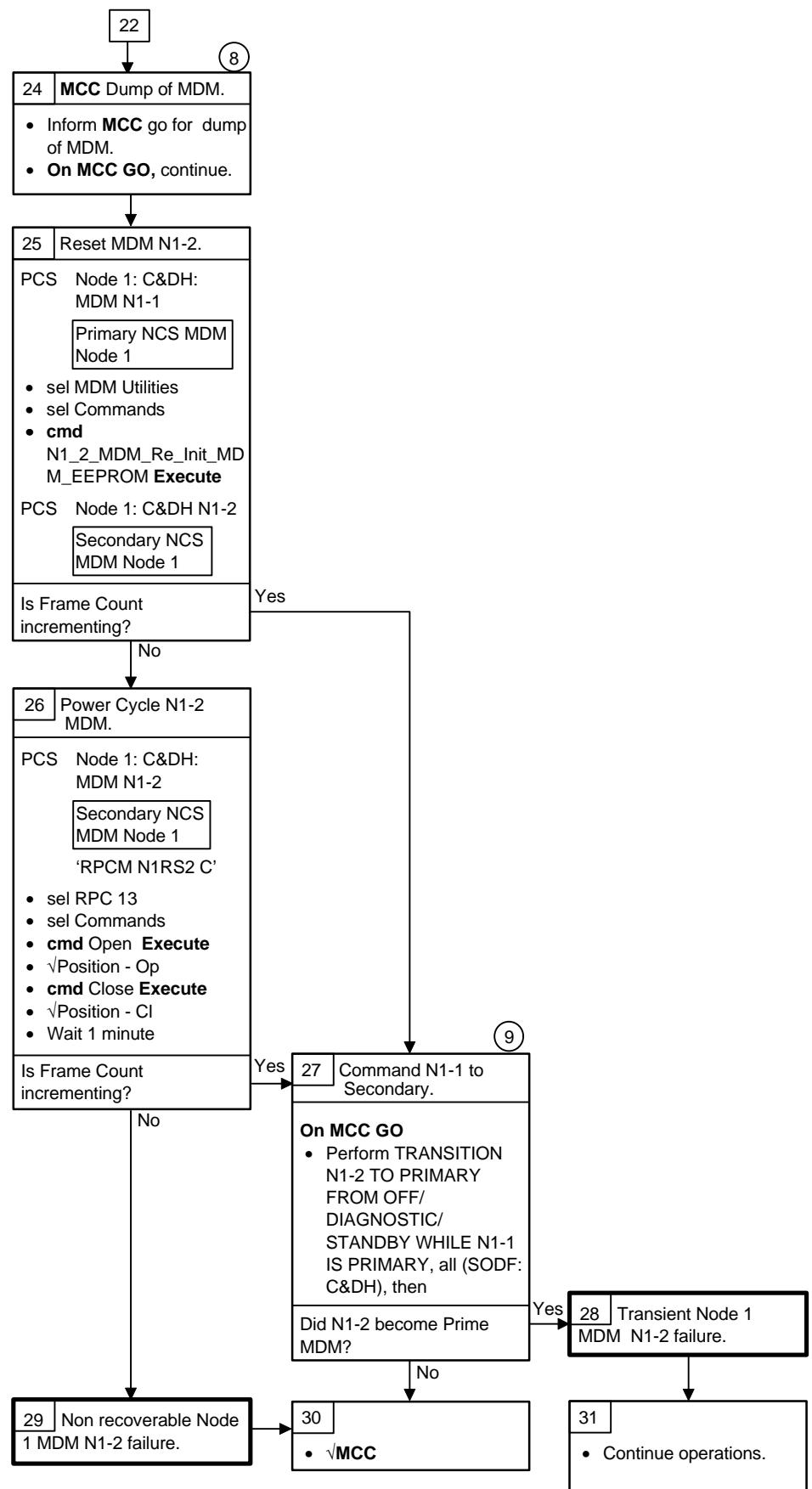
## LOSS OF PCS TELEMETRY (Cont)



(6)  
If N-2 has failed, N1-1 will automatically take over as primary.

(7)  
If UB Orb N1-2 Bus fails, N-2 will command itself to standby and wait longer than normal allowing N1-1 to become primary MDM.

## LOSS OF PCS TELEMETRY (Cont)



(8) MCC may dump All or part of MDM memory.

(9) Commanding N1-1 to Secondary will allow N1-2 to become Prime.

**C&DH**

**CAUTION ALARM**

Caution (1)  
UB Orb N1-1  
Bus Failure

Advisory (1) (2)  
UB EPS N1-14  
Bus Failure

UB EPS N1-23  
Bus Failure

CB GNC N1-1 Bus  
Failure

CB GNC N1-2 Bus  
Failure

LB Sys Lab-1 Bus  
Failure

LB Sys Lab-2 Bus  
Failure

**Nominal Config:**

Comm via Early  
COMM or OIU

N1-2 State = Prim

N1-1 State = Second

Active Tlm Sink =  
FGB

Auto Retry = Ena

Bus FDIR = Ena

**3A 1553 BUS FAILURE**

1 ✓Bus Failure On  
Primary Display

Node 1: C&DH: MDM  
N1-2  
PRIMARY NCS MDM  
Node1

- ✓State - Primary
- ✓MDM ID - N1-2
- ! Symbol appears by the failed bus.

Is the failed bus  
CB GNC-2, or LB Sys  
Lab-2, or UB EPS N1-14,  
or UB EPS N1-23?

No 2 ✓Failure On Second  
Display

Node 1: C&DH: MDM  
N1-1  
SECONDARY NCS  
MDM Node1

- ✓State - Secondary
- ✓MDM ID - N1-1
- ! Symbol appears by and/or yellow color on the failed bus.

Is the failed bus CB GNC 1,  
or LB Sys Lab-1, or UB Orb  
N1-1?

No 4 • ✓MCC

3 ✓Channel Switch Status

- sel Failed Bus
- sel Bus Status Record
- Bus\_XX\_Ch\_Sw\_Cntr
- ✓Ch\_Sw\_Inhit\_Stat - X (Inh)

Is Ch Sw Inhibited (X)?

Yes 36 3

✓Channel Switch Status

- sel Failed Bus
- sel Bus Status
- Record Bus\_XX\_Ch\_Sw\_Cntr
- ✓Ch\_Sw\_Inhit\_Stat - X (Inh)

Is Ch Sw Inhibited (X) ?

Yes 37

6 Reset 1553 Bus.

- Bus Status
- sel 'Bus Commands'
  - cmd Bus\_XX\_Reset\_Bus Execute**
  - ✓Bus\_XX\_Reset\_Cntr - Incremented

10

43

7 Reset 1553 Bus.

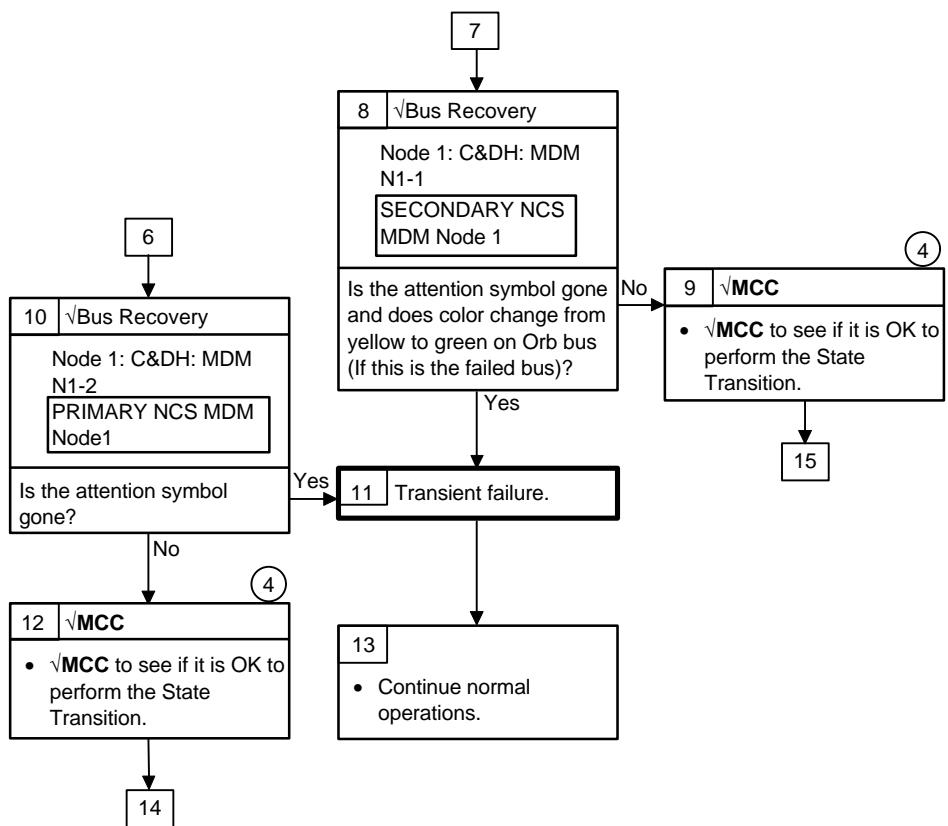
- Bus Status
- sel 'Bus Commands'
  - cmd Bus\_XX\_Reset\_Bus Execute**
  - ✓Bus\_XX\_Reset\_Cntr - Incremented

8

(1) UB Orb\_N1-1 is the only bus that generates this caution message. However, this bus only has a few RTs on it: OIU 1 and 2 (not always present), 4 CBMs (usually off), and FGB 1 and 2 (only one is active on the Primary MDM). So, most of the time, there is no I/O on the bus; hence, there is no caution message generated (no bus failure). In addition, there are cases with only one RT on the bus. In these cases, the failure of the RT itself will also cause the bus to fail. Only the caution and warning messages generate the yellow color on the jailed bus.

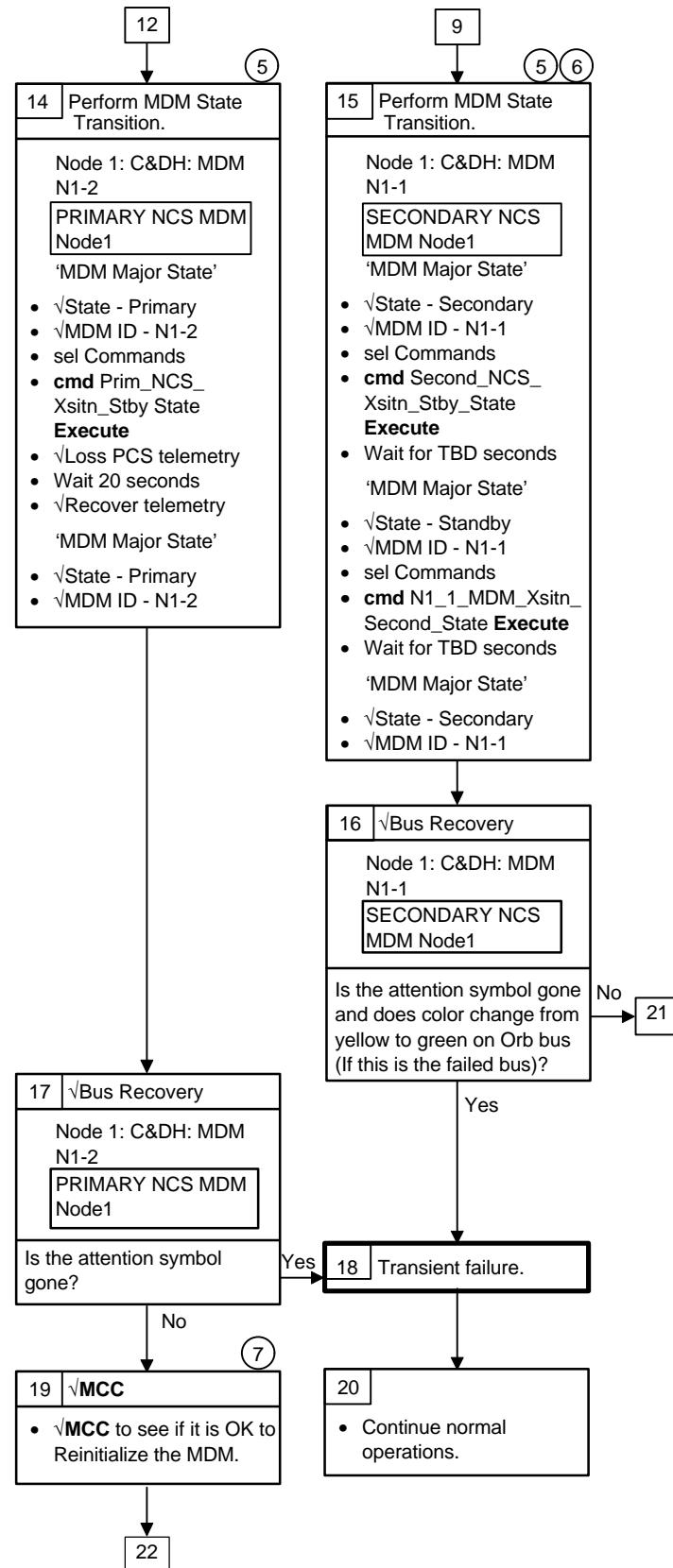
(2) GNC-2 bus has only two RTs on it: N1-1 MDM and a CBM (usually off). GNC-1 only has one CBM (usually off).

(3) 'Bus\_XX\_' is the Ops name of the actual failed bus (e.g. CB GNC\_2). The 'Bus\_XX\_', nevertheless, has to be one of the buses in the block preceding this block (1 or 2).



(4)  
MDM state transition will affect all other space station subsystems connected to that MDM. Make sure that all other disciplines agree with the execution of this step.

## 3A 1553 BUS FAILURE (Cont)



(5)

Transitioning the MDM from one state to another will reset the bus configuration and may fix the failure. The steps in this box are not the same as those in the MDM Reconfiguration procedure where we put the MDM in new state permanently. The N1-2 MDM will not stay in the new state permanently here. It will go back to Primary state after 20 seconds in standby automatically.

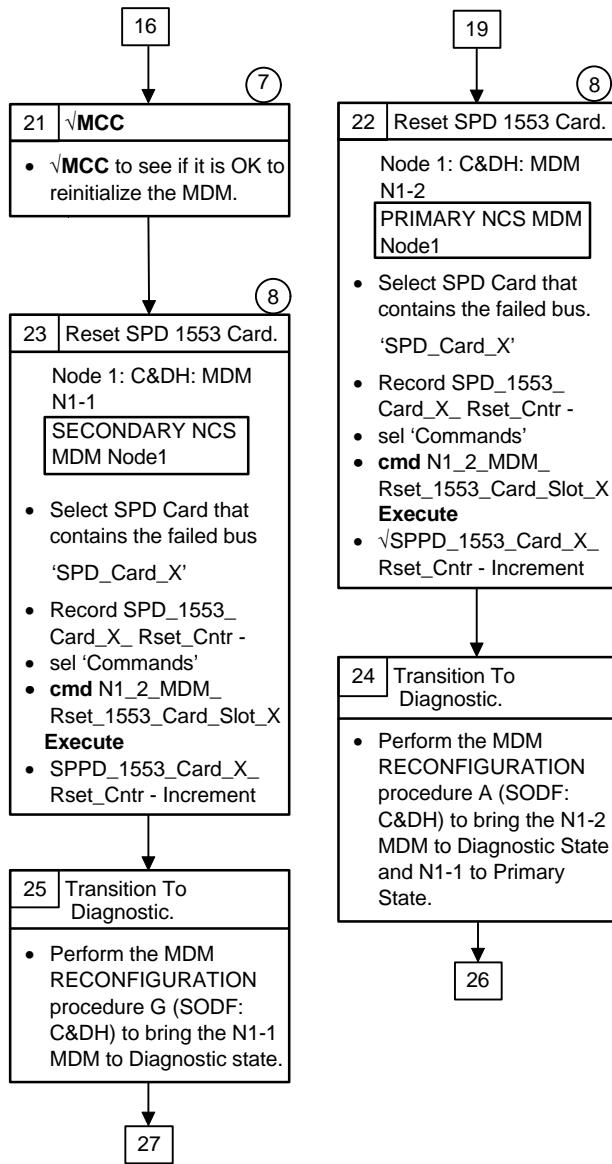
(6)

N1-1 MDM will not go back to Secondary state automatically. It has to be commanded.

(7)

Reinitializing the MDM will affect the operation of the entire MDM which will affect all other subsystems. Make sure that all other disciplines agree with the execution of this step. PCS connected to N1-1 is required.

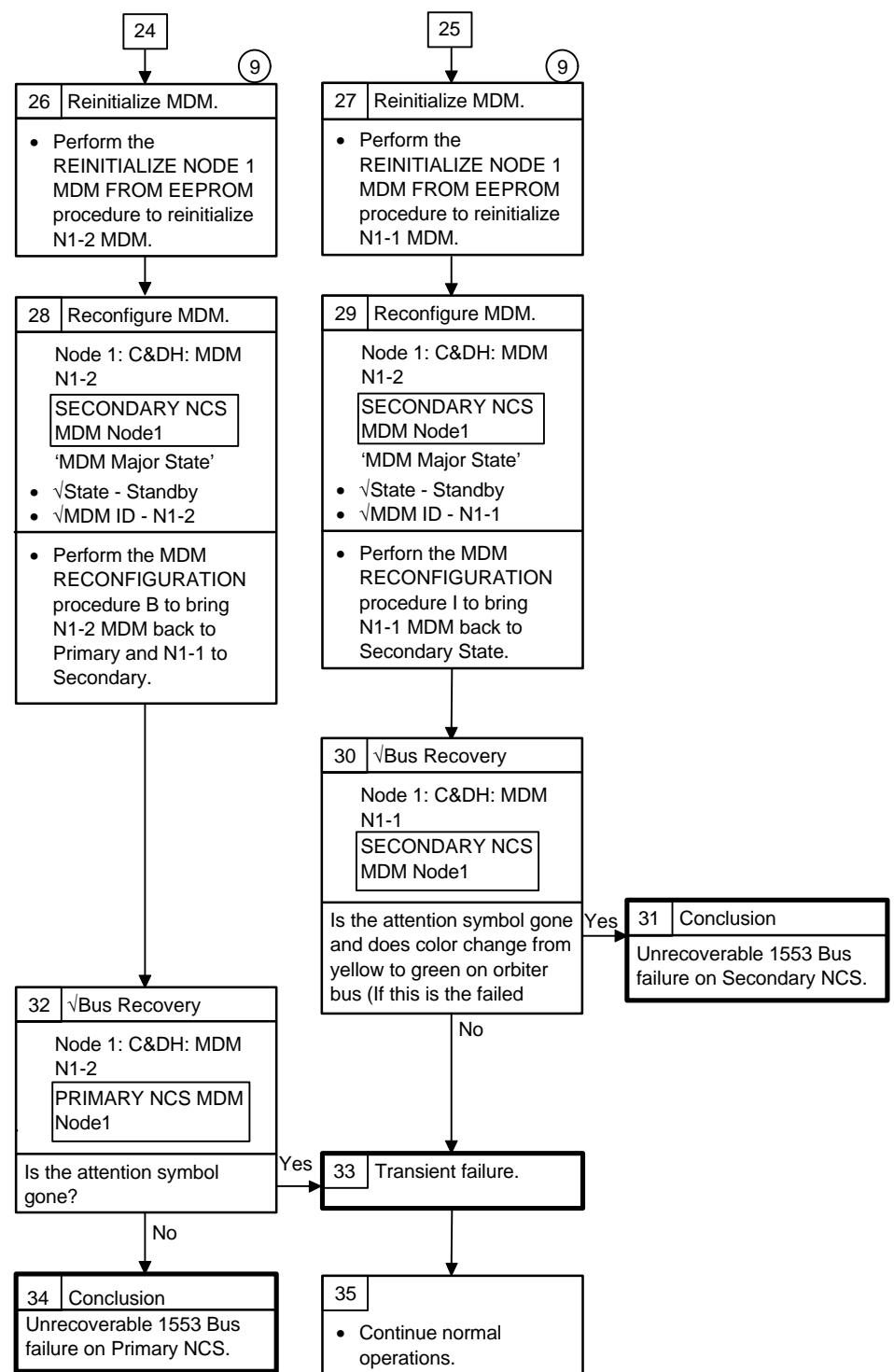
## 3A 1553 BUS FAILURE (Cont)



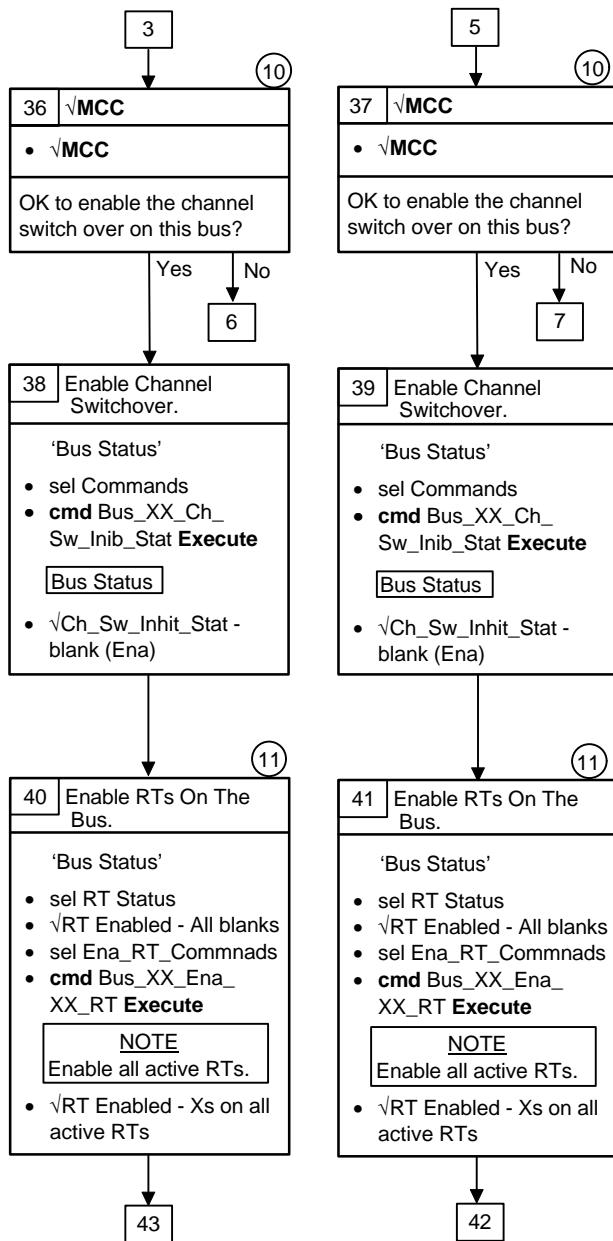
(7)  
Reinitializing the MDM will affect the operation of the entire MDM which will affect all other subsystems. Make sure that all other disciplines agree with the execution of this step. PCS connected to N1-1 is required.

(8)  
Resetting the SPD 1553 Card will not reestablish I/O on the buses. So, resetting the SPD Card and reinitializing the MDM is actually one single action in the attempt to recover the bus failure.

X = 0 for SPD 0.  
X = 1 for SPD 1.

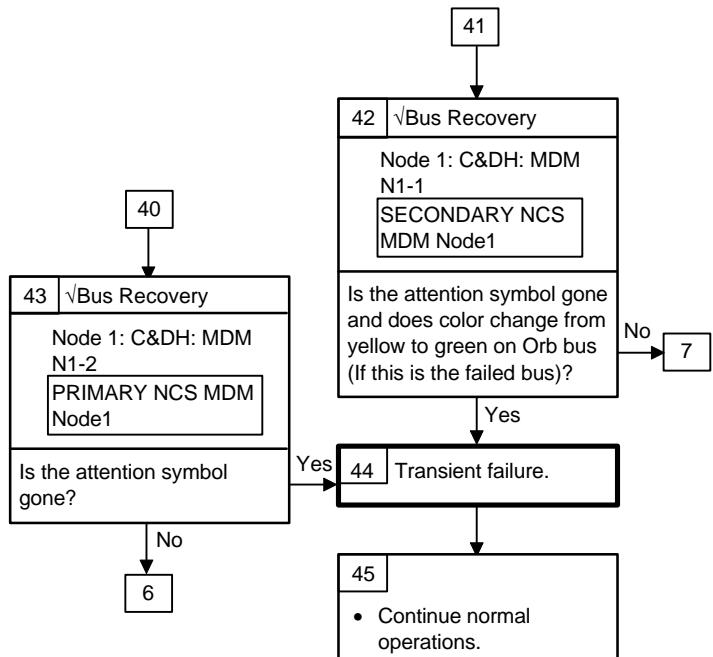
**3A 1553 BUS FAILURE (Cont)**

## 3A 1553 BUS FAILURE (Cont)



(10) The Auto switchover must have been inhibited for a reason. It is necessary to make sure that there are no critical functions being performed on the other channel that may be hazardous if enabled.

(11) Before the bus is declared fail, every single RT on the bus has to fail. The RTs on the failed bus are disabled prior to setting the bus failure flag bit. The RTs will have to be re-enabled to be able to see if the bus works on the other channel. Use the RT # to RT Ops Names Matrix to enable the active RTs on this bus.



**C&DH****NODE 1 MDM I/O CARD FAILURE PROCEDURE**

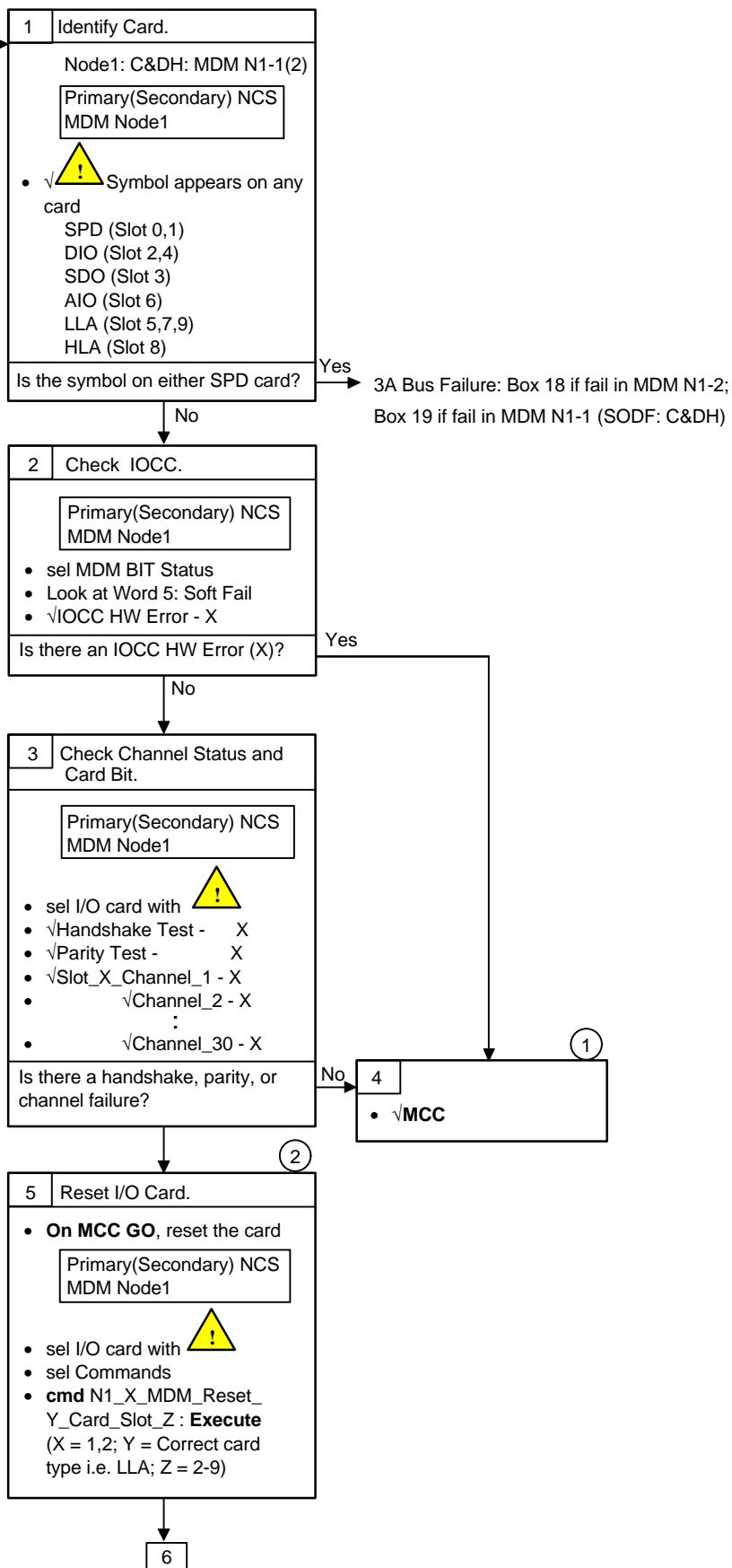
**CAUTION ALARM**

Attention Symbol will appear on

User Notification

Attention Symbol, or call from crew, or another console with funny

**Nominal Config:**  
Comm Via Early Comm or OIU



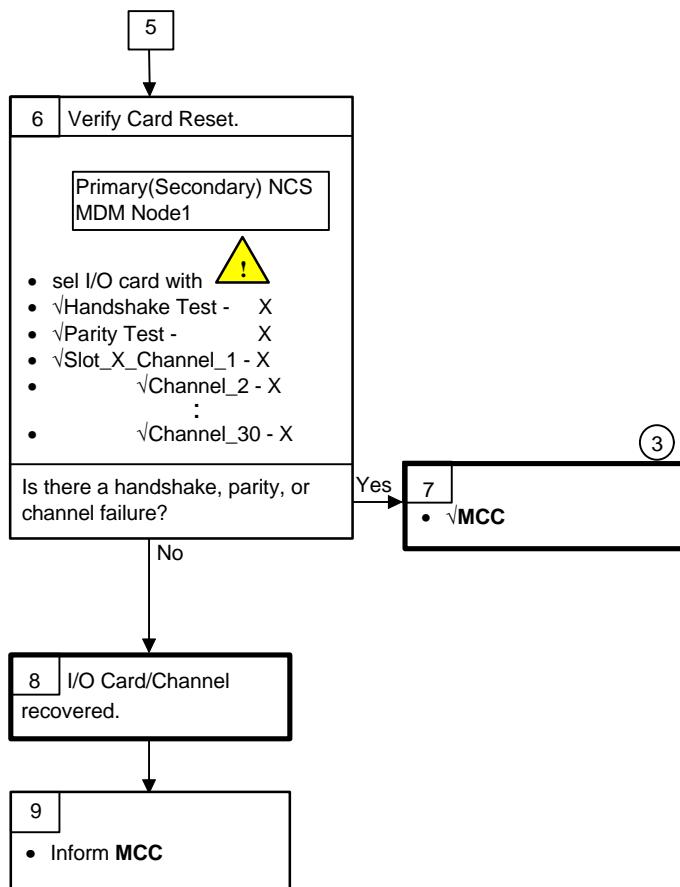
(1)

Check with **MCC** to decide if want to power cycle the MDM to try and regain the I/O card.

(2)

Before resetting the card, decide if card is supporting more important tasks on any good channel or if need to wait before card reset. This is done via the Node Channelization Chart.

## NODE 1 MDM I/O CARD FAILURE PROCEDURE (Cont)

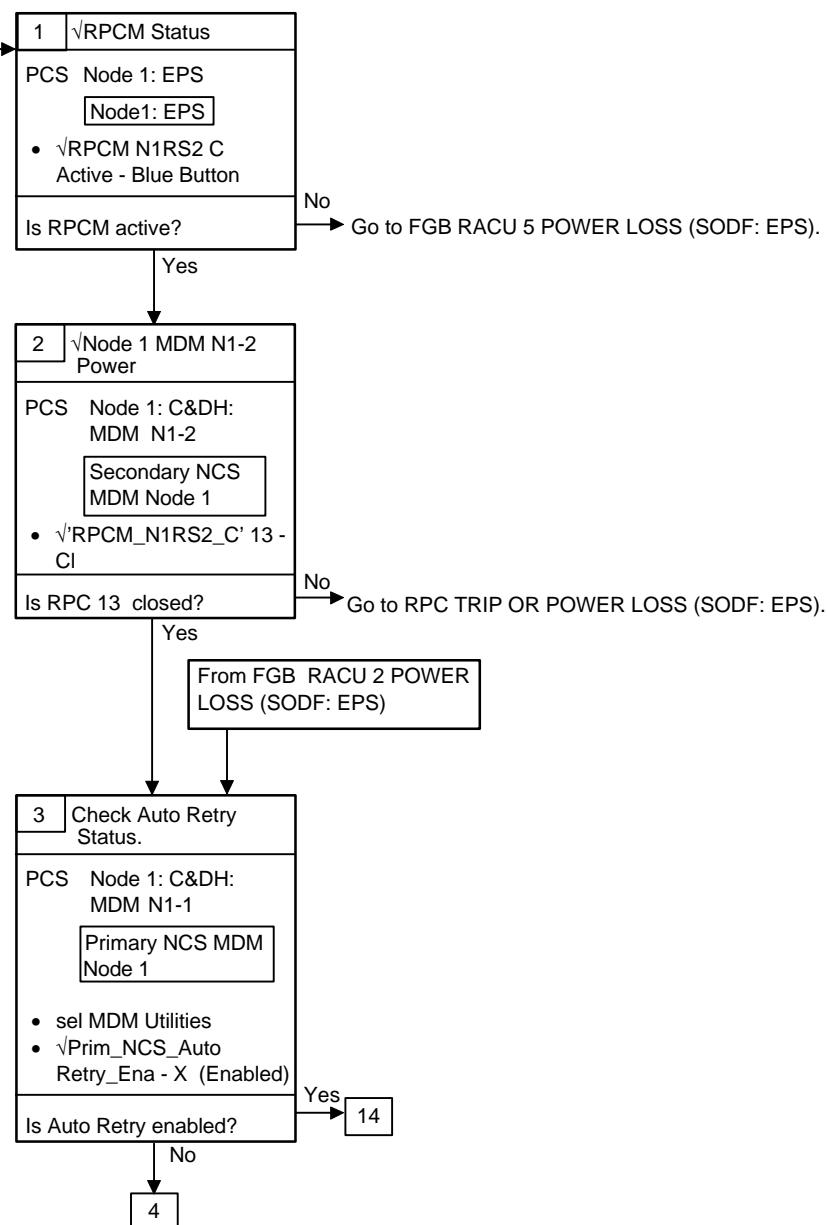


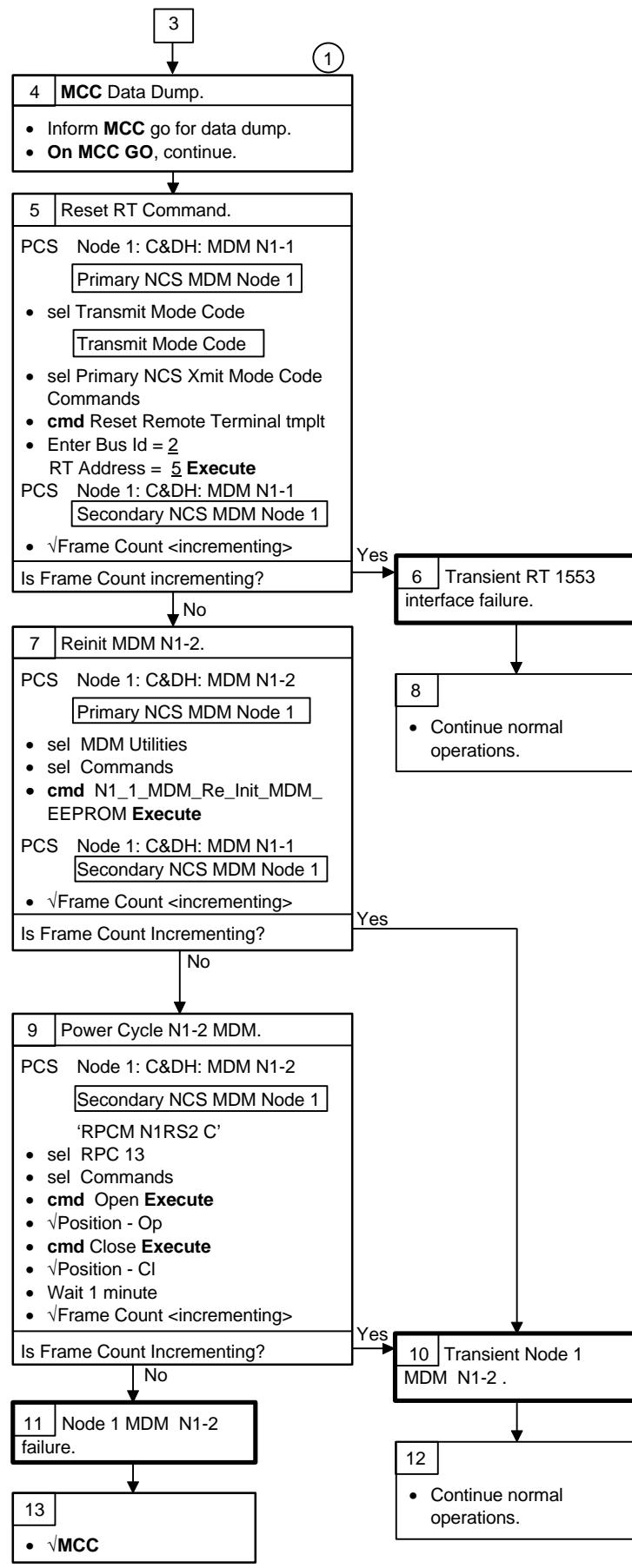
(3)  
Check with **MCC** to decide if want to power cycle the MDM to try and regain the I/O card.

**C&DH****MDM N1-1 DETECTED RT FAIL MDM N1-2 - PMA 1**CAUTION  
ALARM

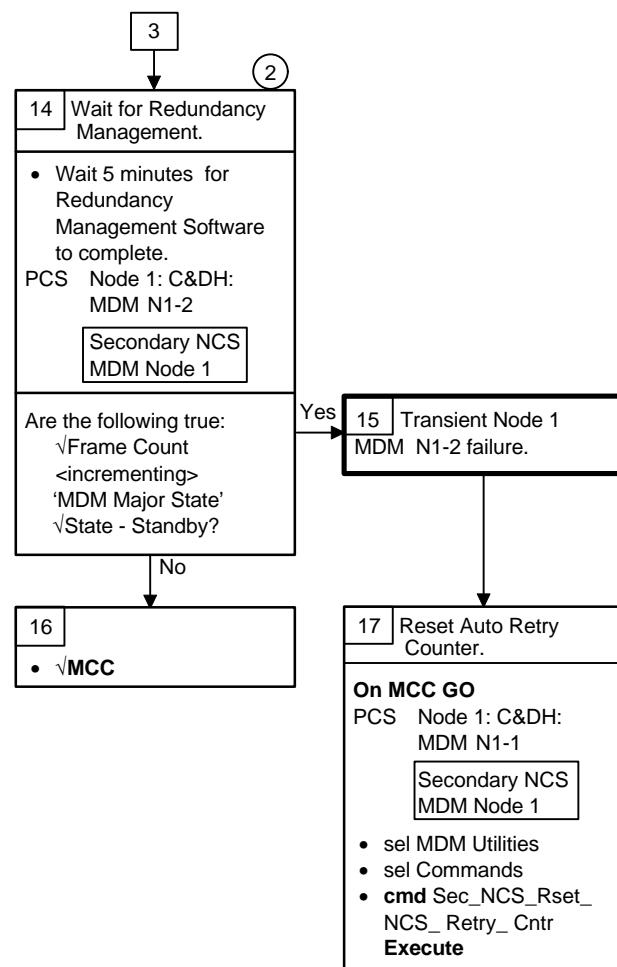
MDM N1-1  
Detected RT Fail  
MDM N1-2 -  
PMA 1

**Nominal Config:**  
N1-2 Secondary  
N1-1 Primary



**MDM N1-1 DETECTED RT FAIL MDM N1-2 - PMA 1 (Cont)**

(2)  
Auto Retry will power cycle MDM N1-2.



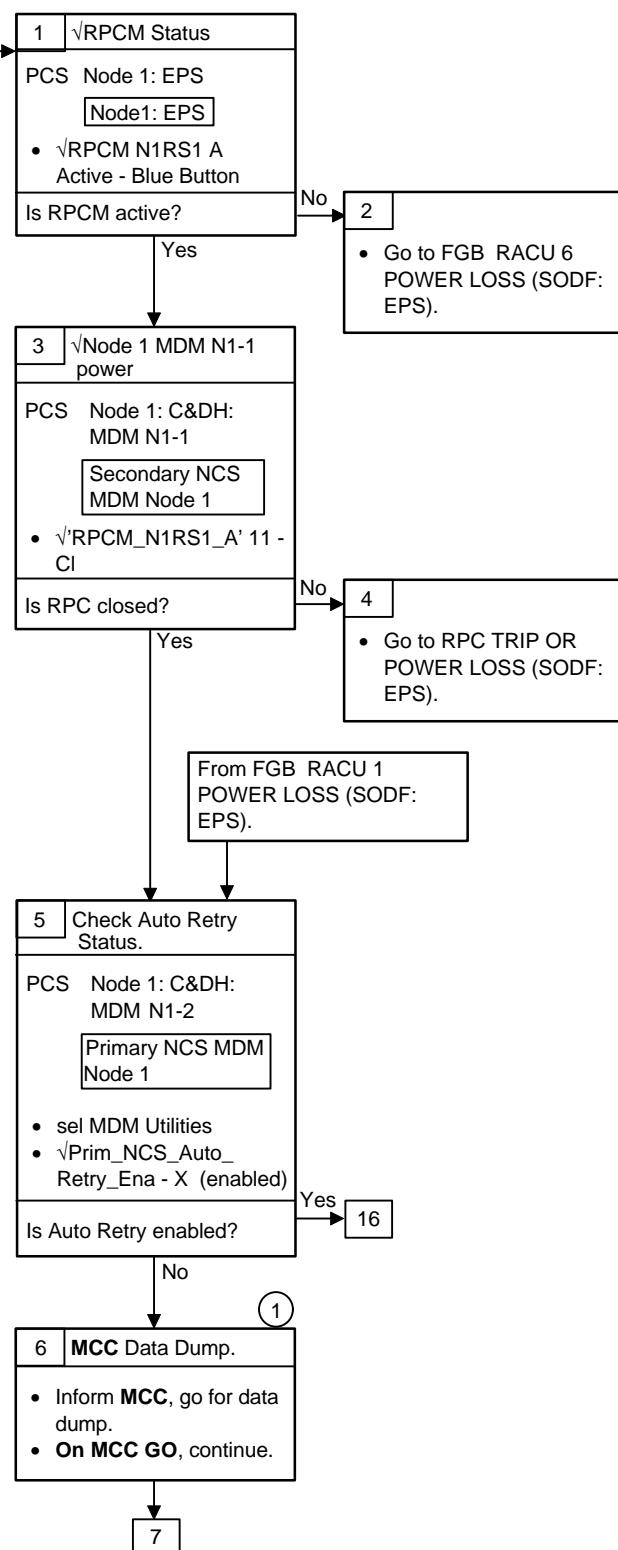
**C&DH****MDM N1-2 DETECTED RT FAIL MDM N1-1 - PMA 1**

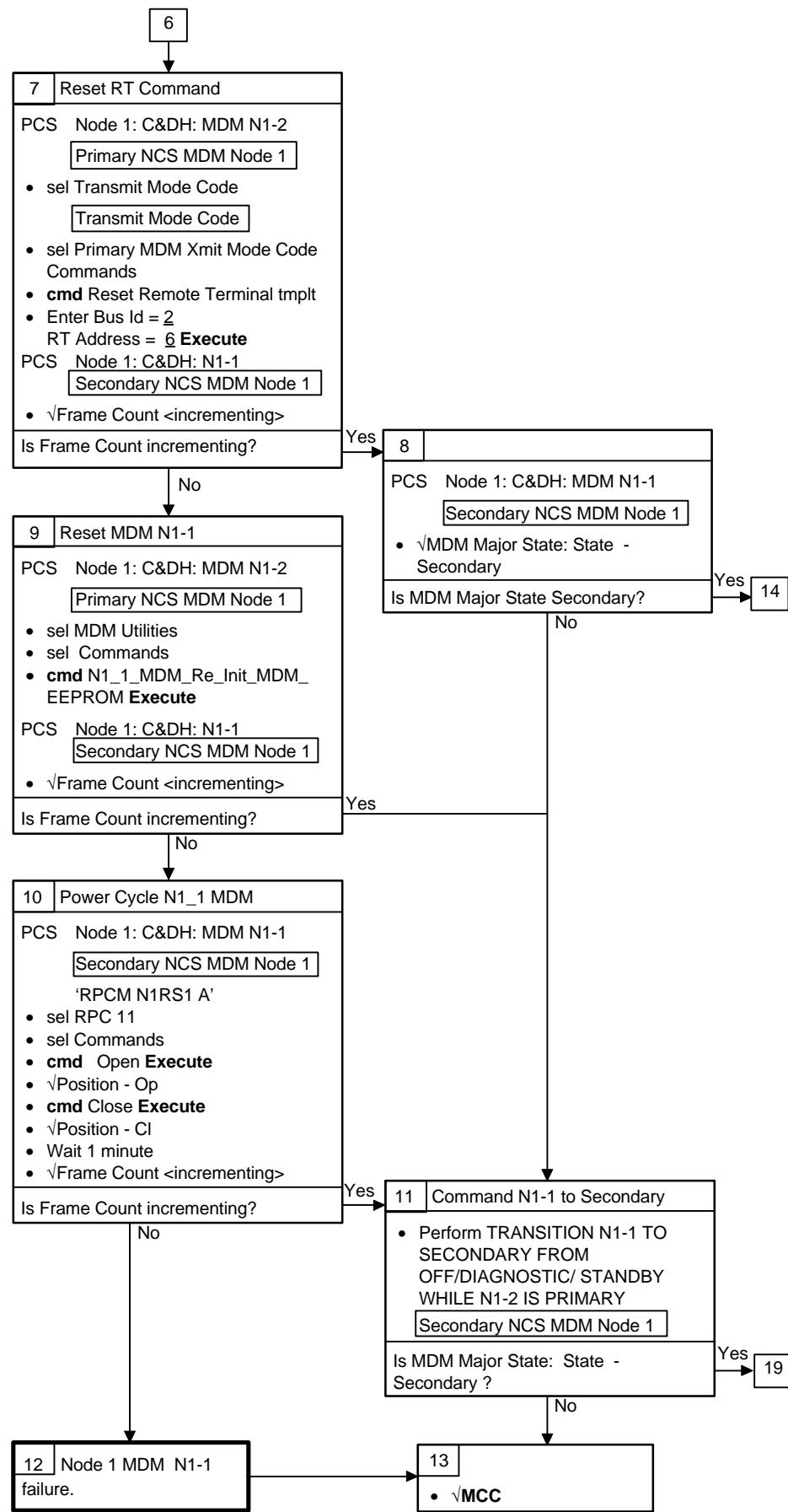
(1) MCC may dump all or part of MDM Memory to determine source of the failure.

**CAUTION ALARM**

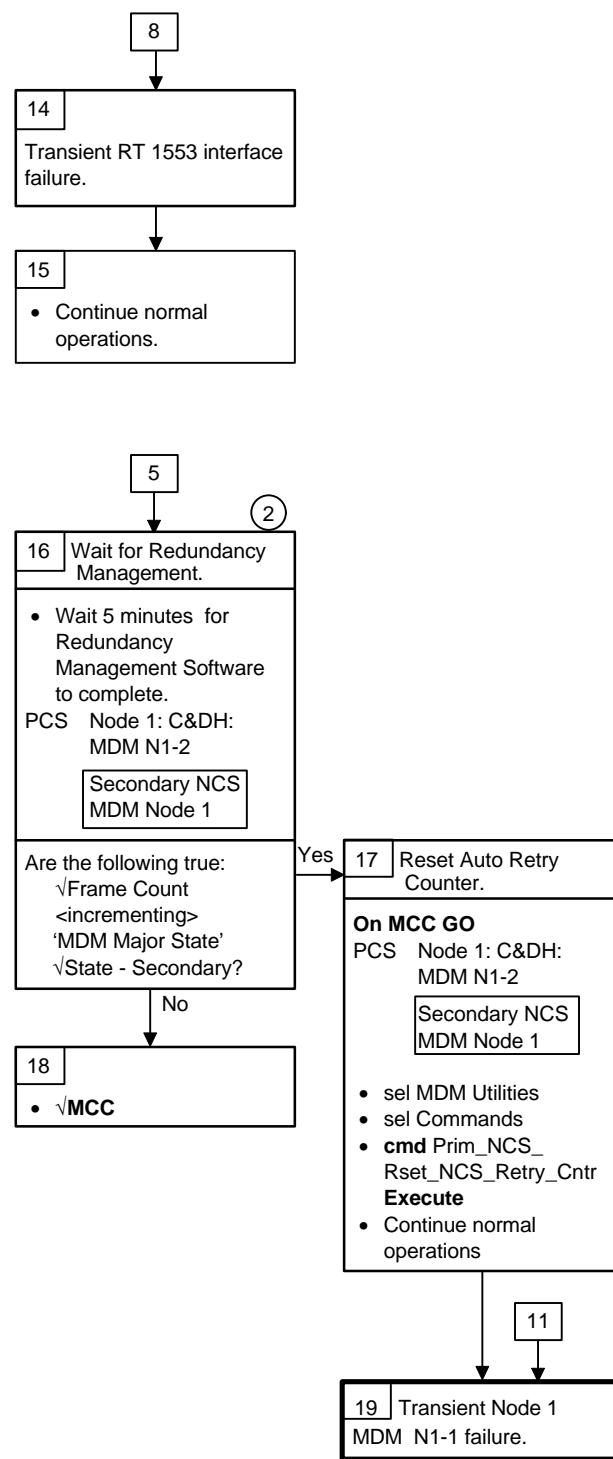
MDM N1-2  
Detected RT Fail  
MDM N1-1 -  
PMA 1

**Nominal Config:**  
N1-2 Primary  
N1-1 Secondary



**MDM N1-2 DETECTED RT FAIL MDM N1-1 - PMA 1 (Cont)**

(2)  
Auto Retry will power cycle MDM N1-1 and command it to secondary.



## **MDM LOAD IN DIAGNOSTIC STATE (2A-3A)**

1. PERFORM PRE-LOAD SANITY CHECK WITH MEMORY MAP AND FILE TO BE LOADED

**FMT:LOAD:INITIATOR**

If S/W Load

- ✓SW\_Load\_XX\_EEPROM\_XX - (SW Load Version ID i.e. Rev 2)
- ✓Memory Location - EEPROM
- ✓SW\_Load\_EEPROM\_Start\_Addr - compatible with Memory Map
- ✓SW\_Load\_XX\_Wd\_Count - compatible with Memory Map

If ADT Load

**NOTE**

Separate files are required for Loads to non contiguous memory areas, and also for DRAM and EEPROM Loads.

- ✓Memory Location - EEPROM
- ✓ADPXX\_EEPROM\_Start\_Addr - compatible with Memory Map
- ✓ADPXX\_Wd\_Count - compatible with Memory Map
- ✓ADPXX\_Ver\_Id -
- ✓ADPXX\_Cksum -
- ✓Destination\_Device - MDMXX

2. CONFIGURE FOR COMMAND UPLINK

**TELCOM: TBD**

If N1-2 is Primary (N1-1 is in Diagnostics)

- ✓Command\_Path - Orbiter/Early Comm  
If uplink path = orbiter  
Normal OIU configuration.  
✓OIU\_Routing\_Code -

Send Enable RT Device command to enable N1-1 MDM

- ✓N1-1 = Enable RT  
Send Disable NCS Auto Retry on N1-1  
✓N1-2 Auto Retry on N1-1 - Disable

If N1-1 is Primary (N1-2 is in Diagnostics)

- ✓Command\_Path - Orbiter/Early Comm  
If uplink path = orbiter  
Reconfigure the OIU to RT on Bus 3, BC on Bus 4, and Format 002.  
✓OIU\_Routing\_Code -

Send Enable RT Device command to enable N1-2 MDM  
√N1-2 = Enable RT  
Send Disable NCS Auto Retry on N1-2  
√N1-1 Auto Retry on N1-2 - Disable

If both MDMs are in Diagnostics (Orbiter must present)

Uplink Path = OIU.  
Reconfigure the OIU to make bus 3/4 BC to the MDM being loaded  
and use format 002.  
√OIU\_Routing\_Code -

3. SEND LOAD FILE

FMT:LOAD:INITIATOR

If SW Load

**cmd\_SW\_Load\_XX\_Version XX\_Uplink (TBD)**

If ADT Load

**cmd\_ADP\_Load\_XX\_Uplink (TBD)**

NOTE

Send all load **cmd** files. Multiple ADP files may be required.

**cmd\_SW\_PT#\_Uplink (TBD)**

**cmd\_ADP\_XX\_cksum \_Uplink (TBD)**

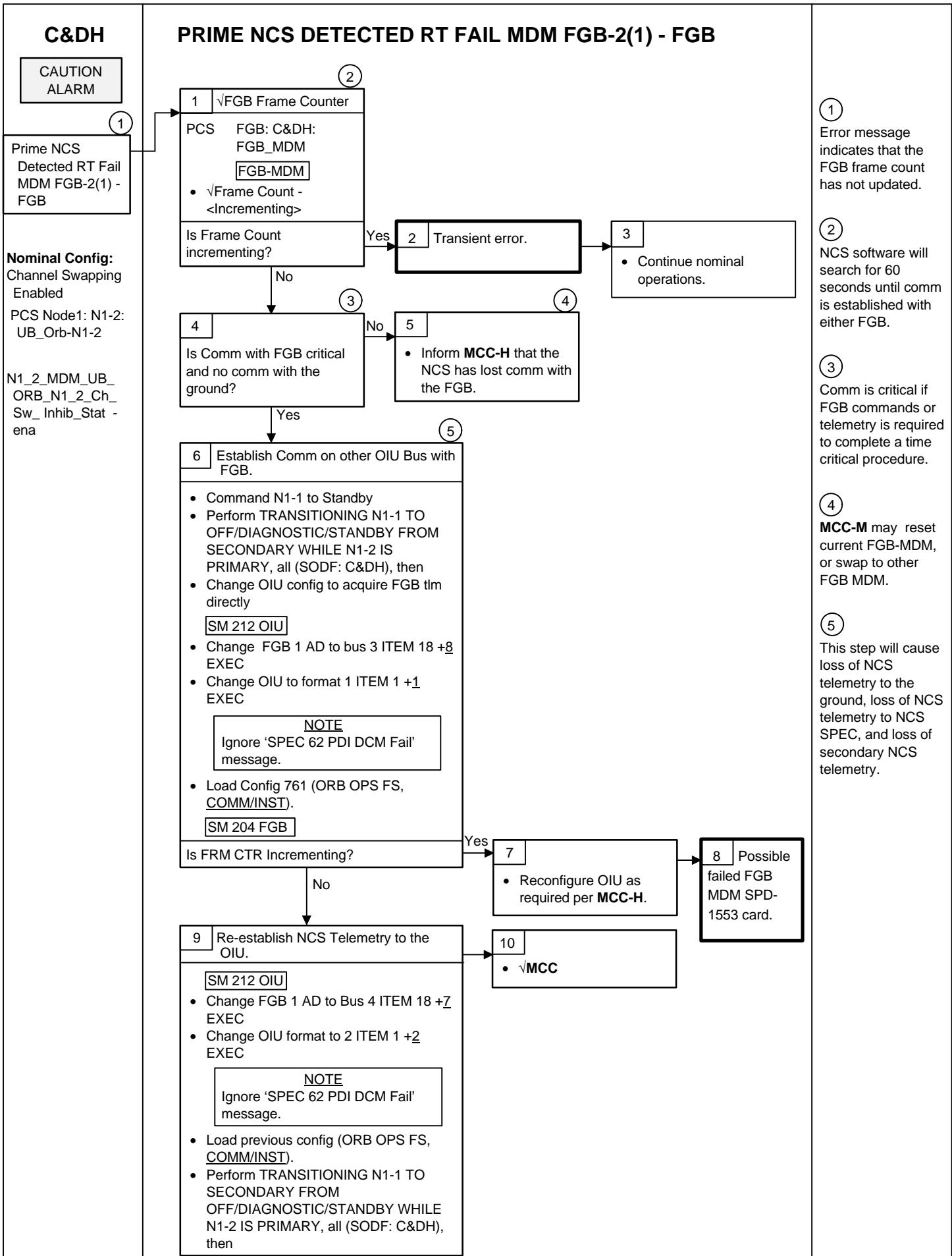
4. VERIFY COMPLETION OF LOAD

FMT:LOAD:INITIATOR

√FMT\_Load\_Status- 100% complete

5. REINITIALIZE EEPROM

Go to REINITIALIZE NODE 1 MDMs, all (SODF: TBD).



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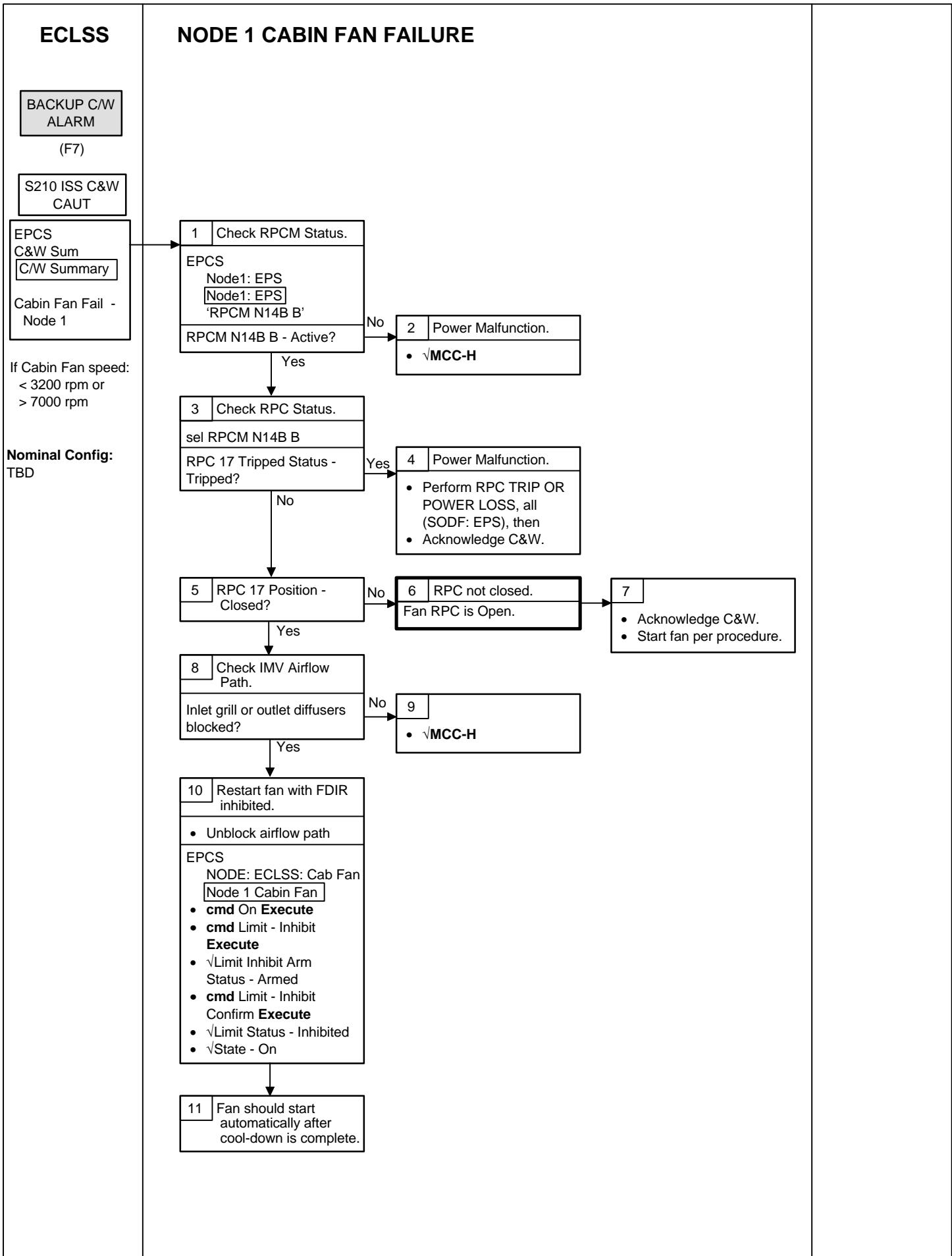
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ECLSS

**ECLSS**

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**ECLSS****NODE 1 IMV AFT PORT FAN FAIL LOW**

**BACKUP C/W ALARM**  
(F7)

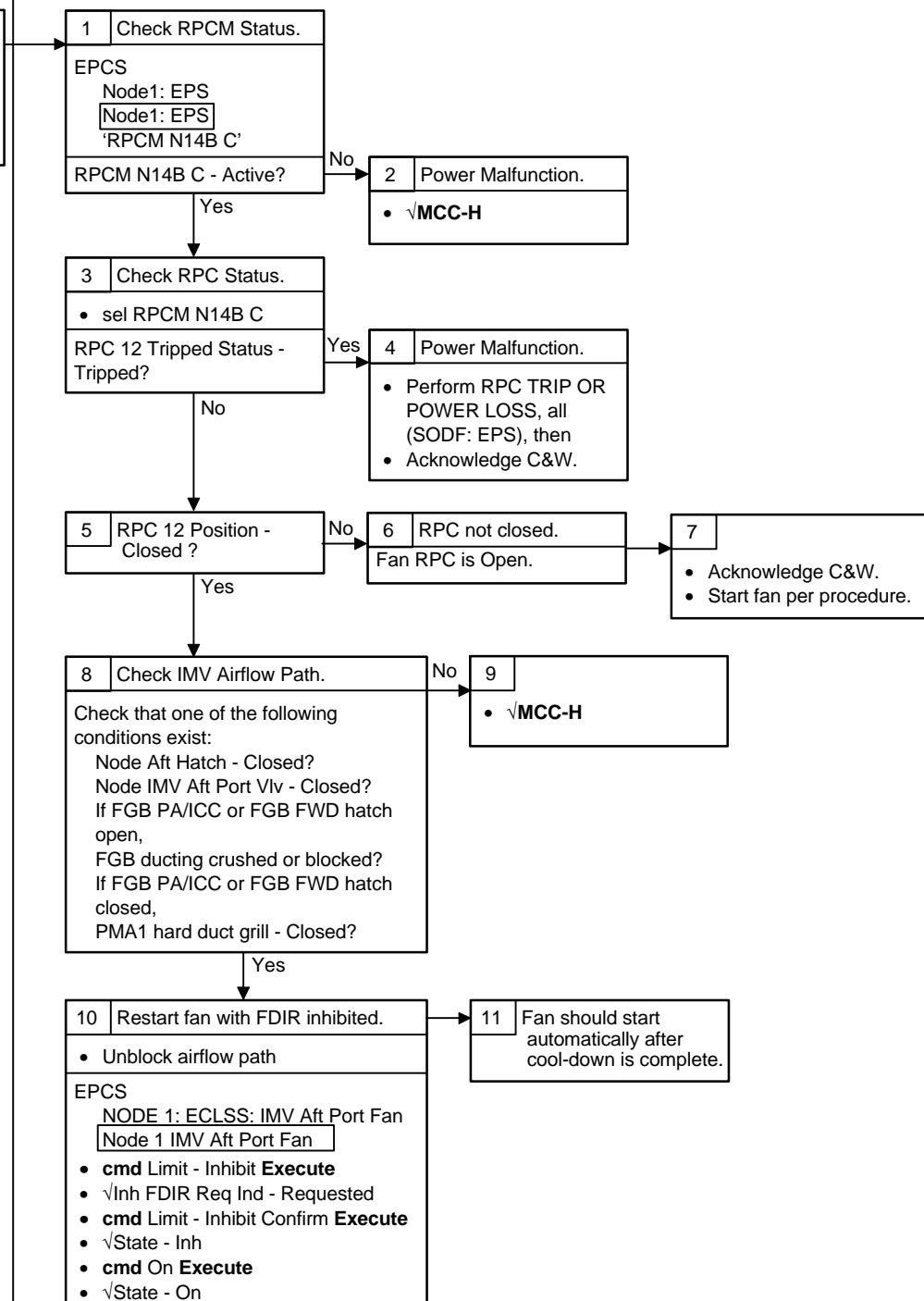
**S210 ISS C&W CAUT**

**EPKS C&W Sum C/W Summary**

**IMV Aft Port Fan Fail Low -**

If Cabin Fan speed:  
< 7462 rpm

**Nominal Config:**  
TBD



**ECLSS****NODE 1 IMV VALVE FAILURE**

**BACKUP C/W ALARM**  
(F7)

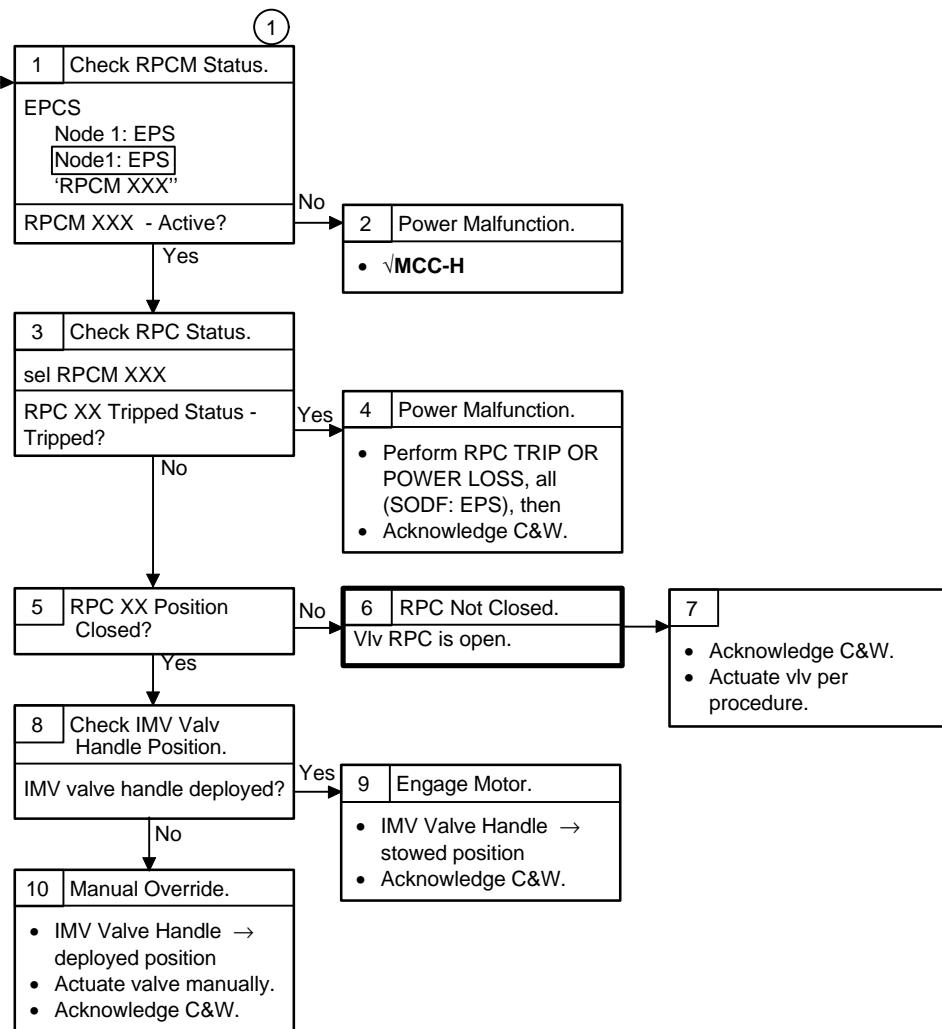
**S210 ISS C&W CAUT**

**EPICS C&W Sum C/W Summary**  
**IMV X X Vlv Fail**

If IMV fan speed:  
> 9500 rpm

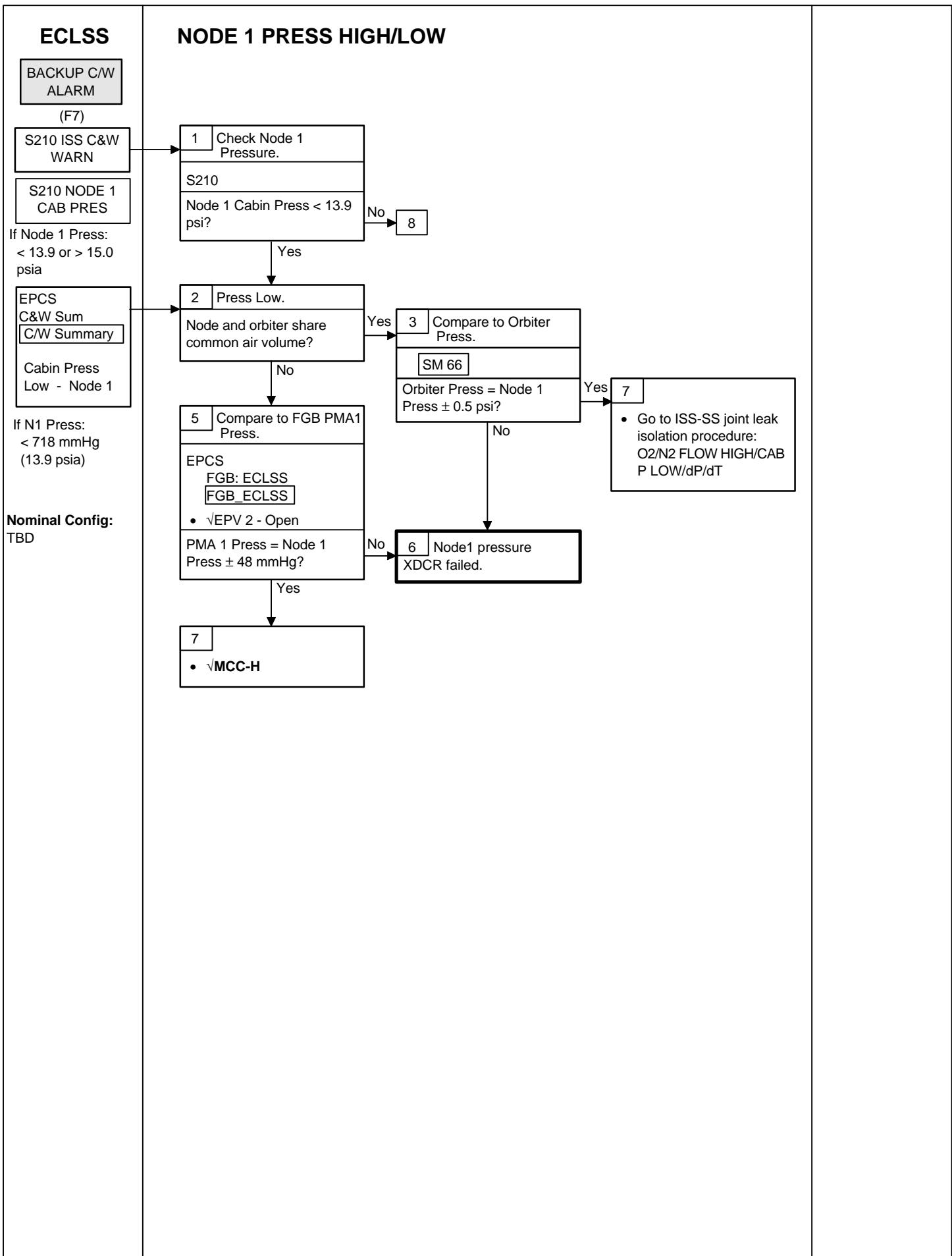
If IMV fan speed:  
< 13.9 or > 15.0

**Nominal Config:**  
TBD



①  
Equalization of Node 1 with orbiter should be considered to preclude PPRVs actuation.

Node 1 PPRVs crack at 765.2 mmHg (14.8 psid) with full open at 780.7 mmHg (15.1 psid).



## ECLSS

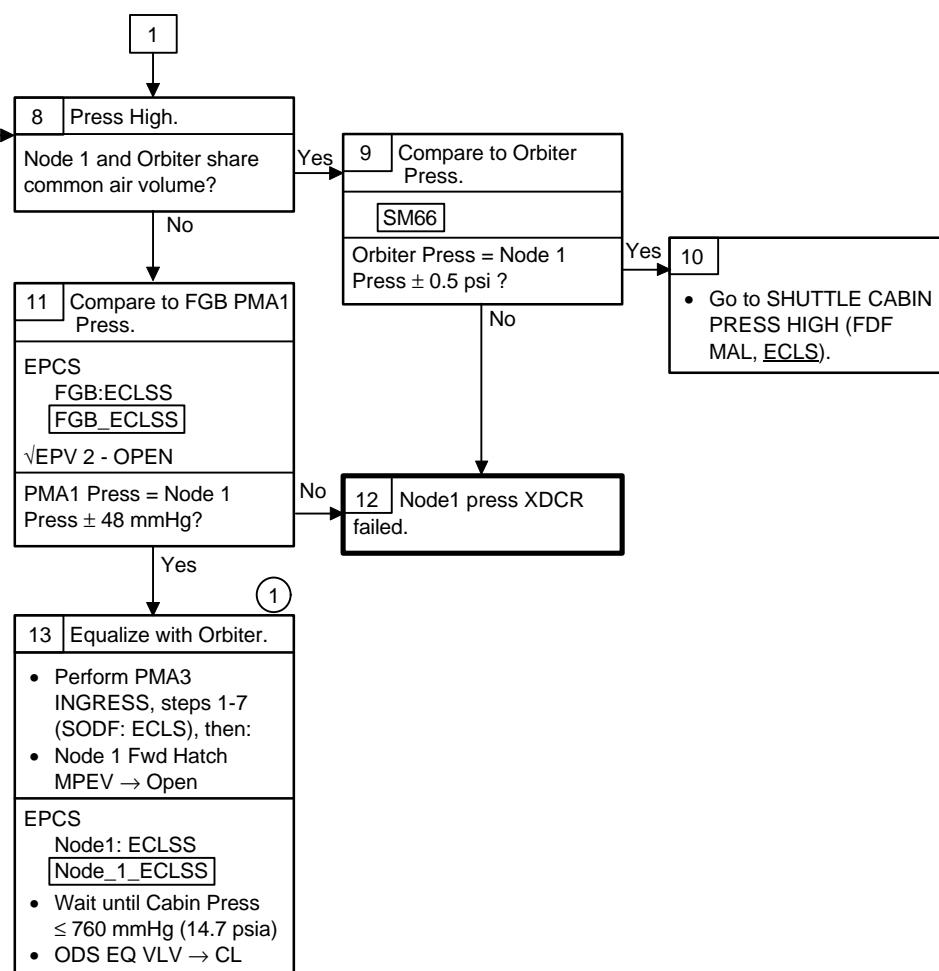
## NODE 1 PRESS HIGH/LOW (Cont)

EPICS  
C&W Sum  
C/W Summary

Cabin Press  
Low - Node 1

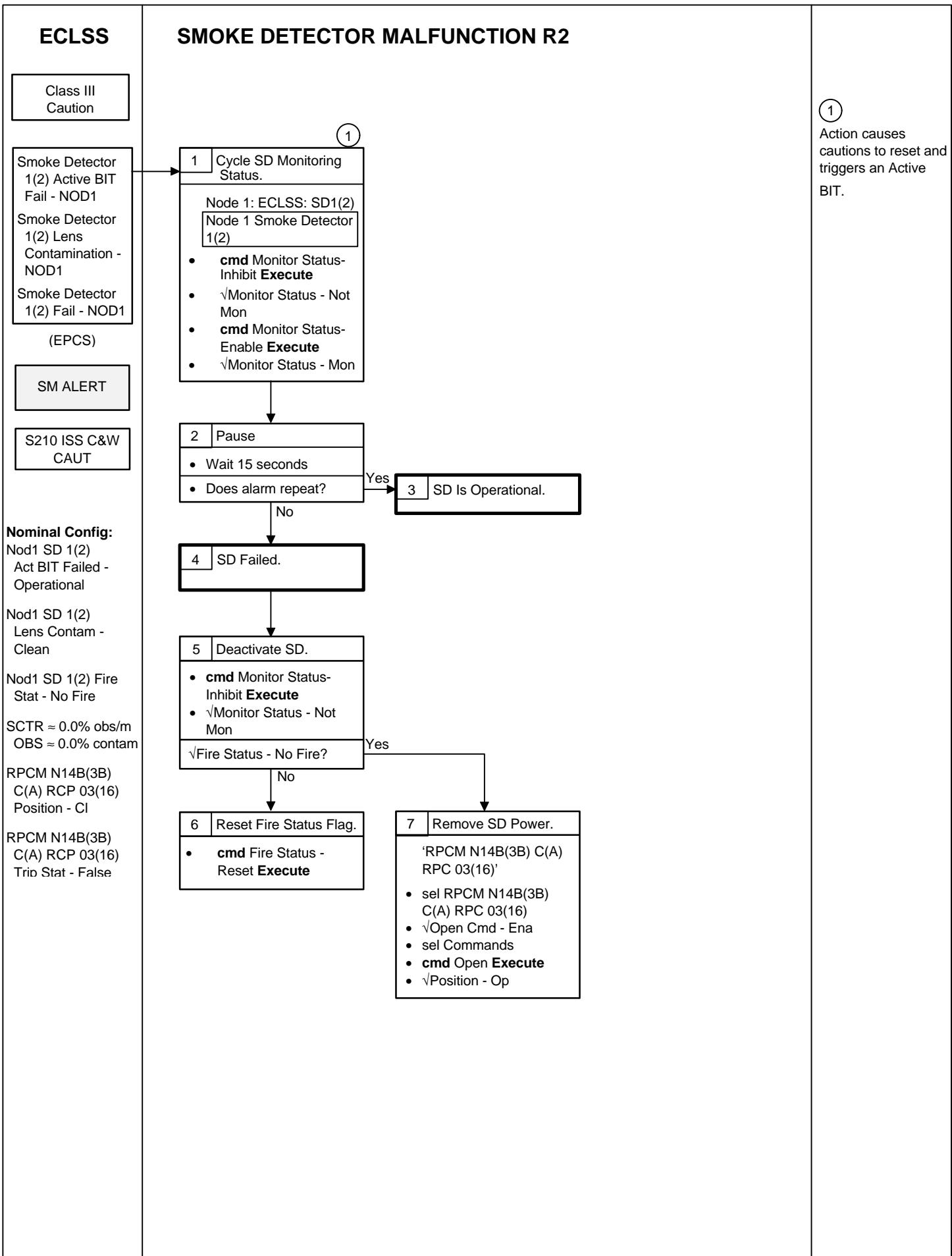
If Node 1 press:  
< 786 mmHg  
(15.2 psia)

If Node 1 press:  
< 13.9 or > 15.0



①  
Equalization of Node 1 with orbiter should be considered to preclude PPRV actuation.

Node 1 PPRVs crack at 765.2 mmHg (14.8 psid) with full open at 780.7 mmHg (15.1 psid).



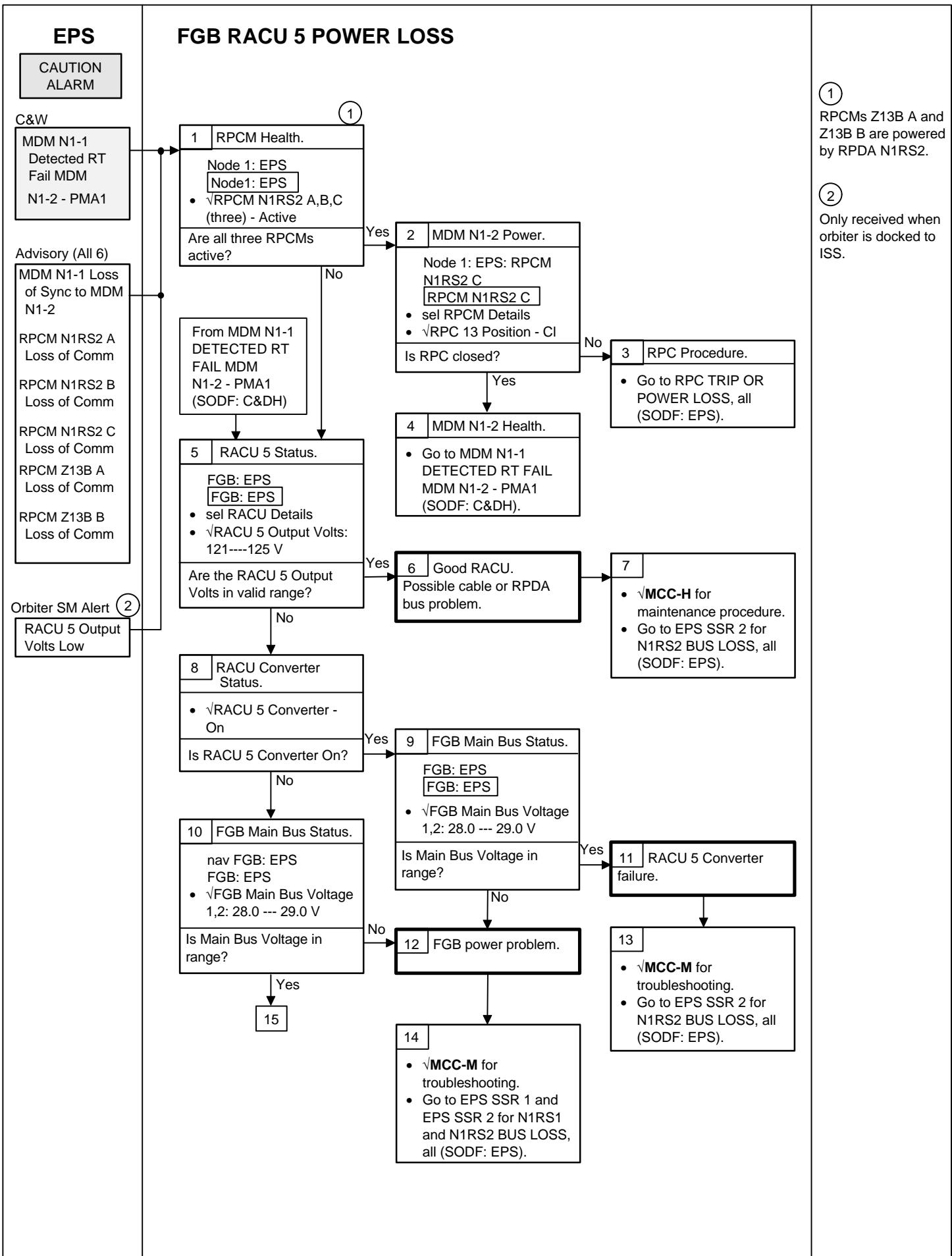
## EPS PROCEDURES

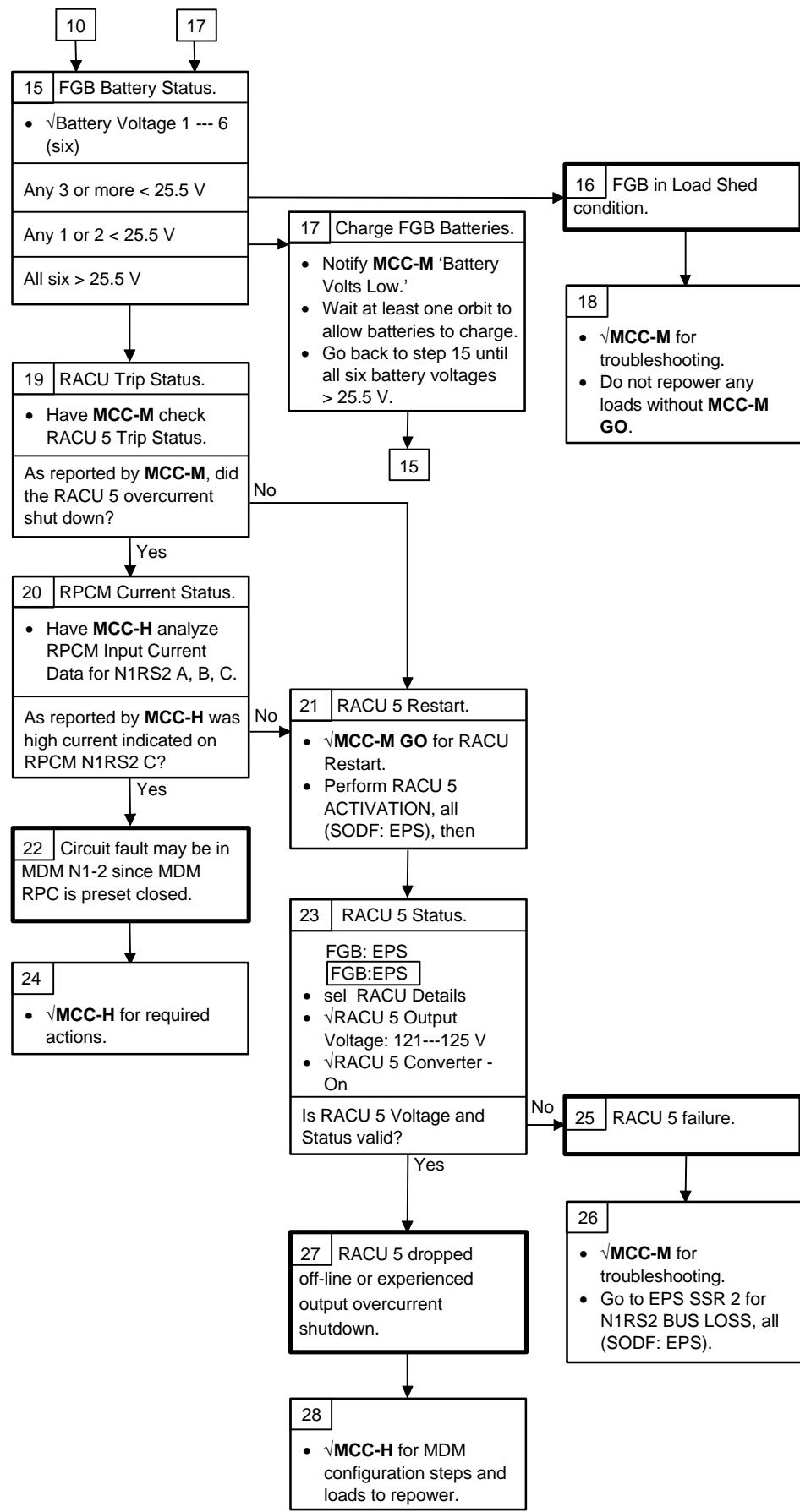
FGB RACU 5 POWER LOSS .....	1-37
FGB RACU 6 POWER LOSS .....	1-39
3A RPC TRIP OR POWER LOSS .....	1-41
SPDA RAIL HEATER FAILURE.....	1-42
RPCM LOSS OF COMM.....	1-47

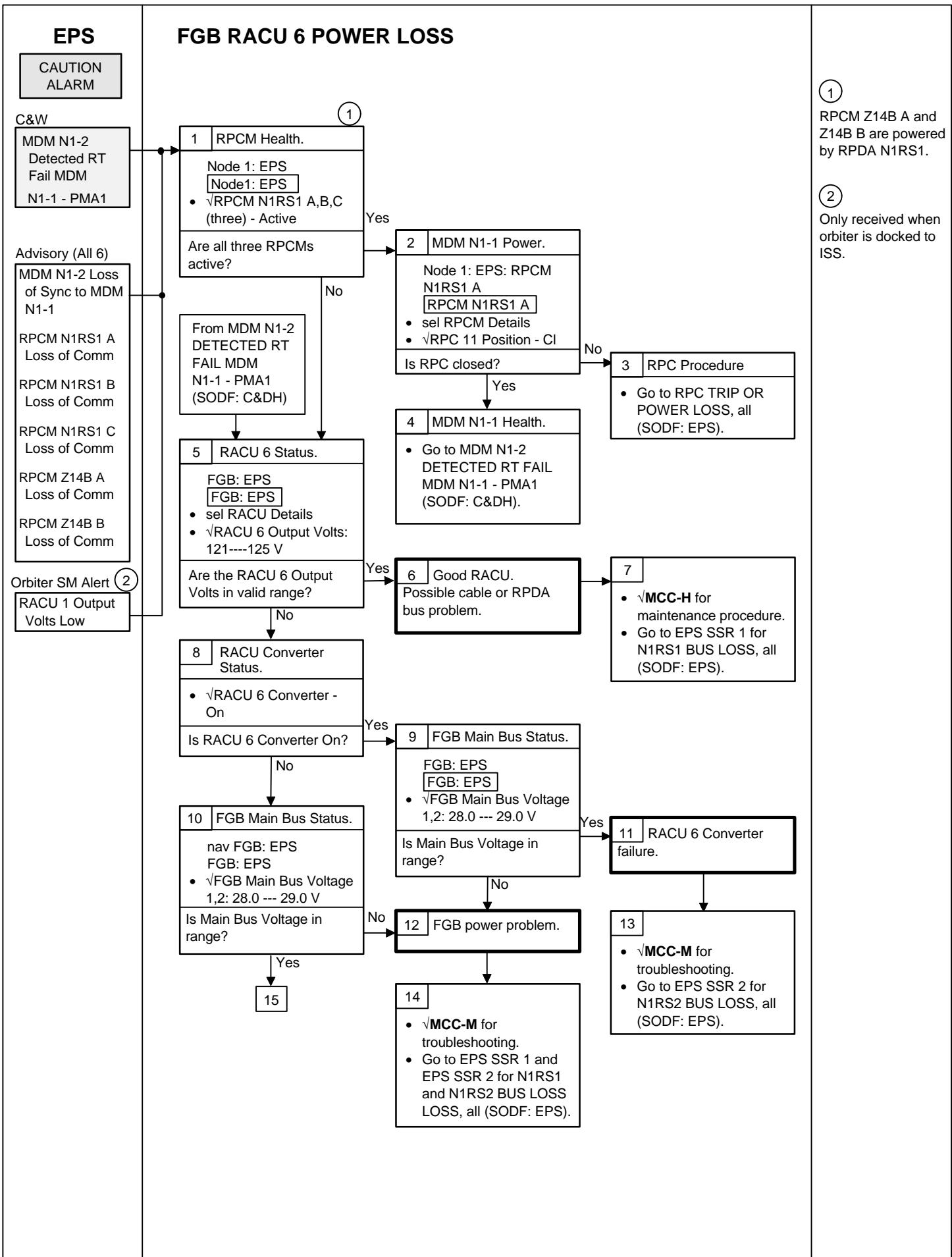
EPS

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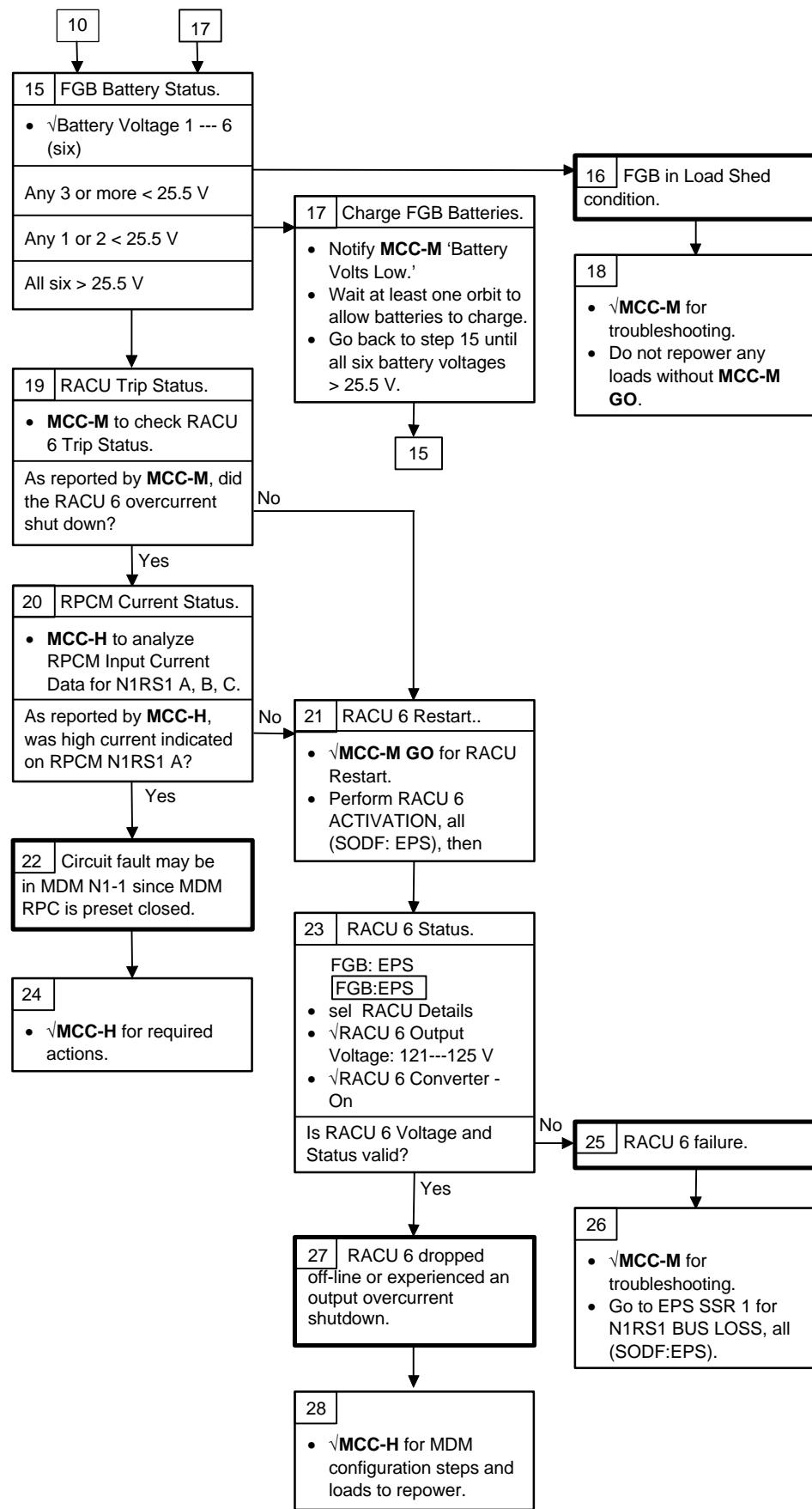
EPS

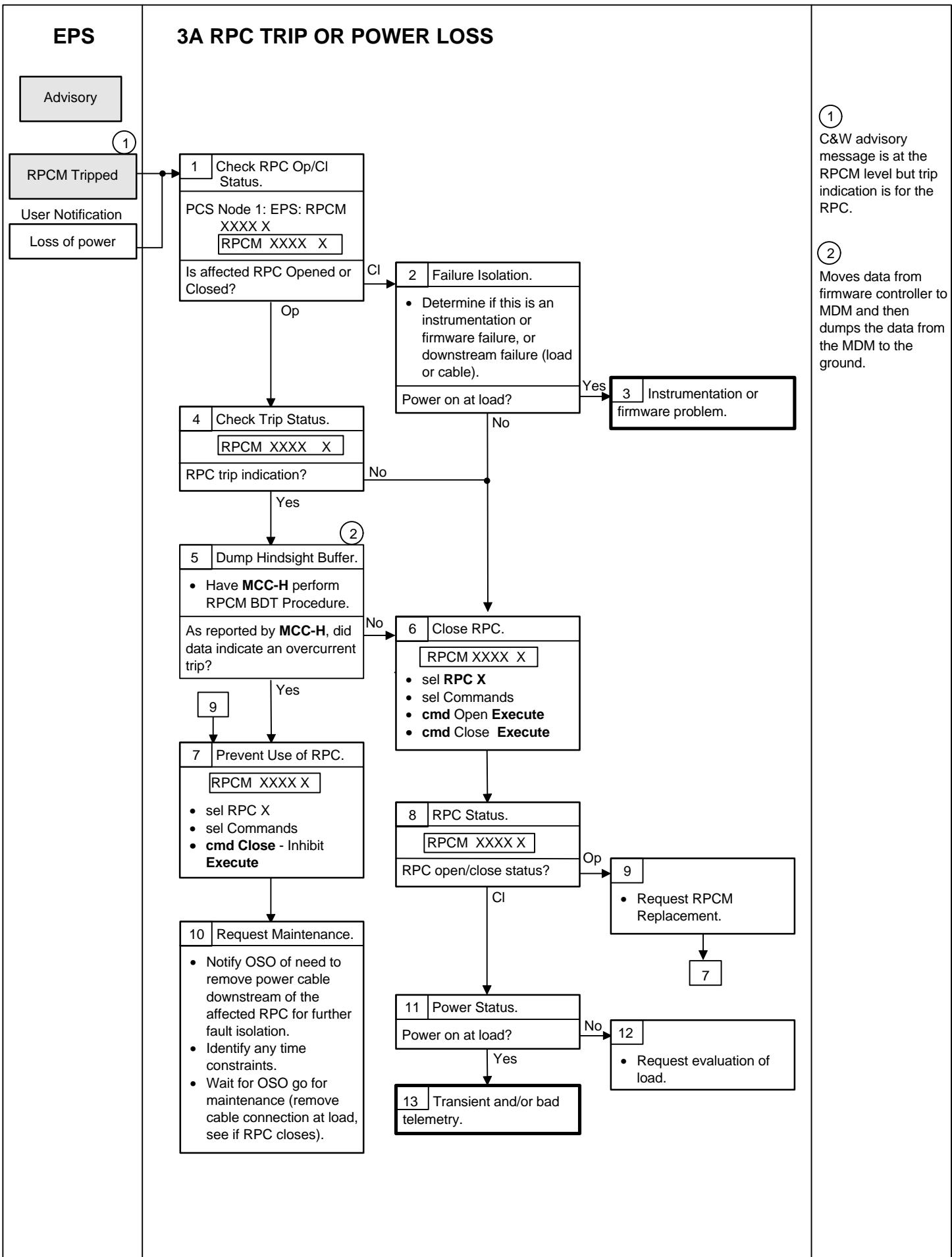


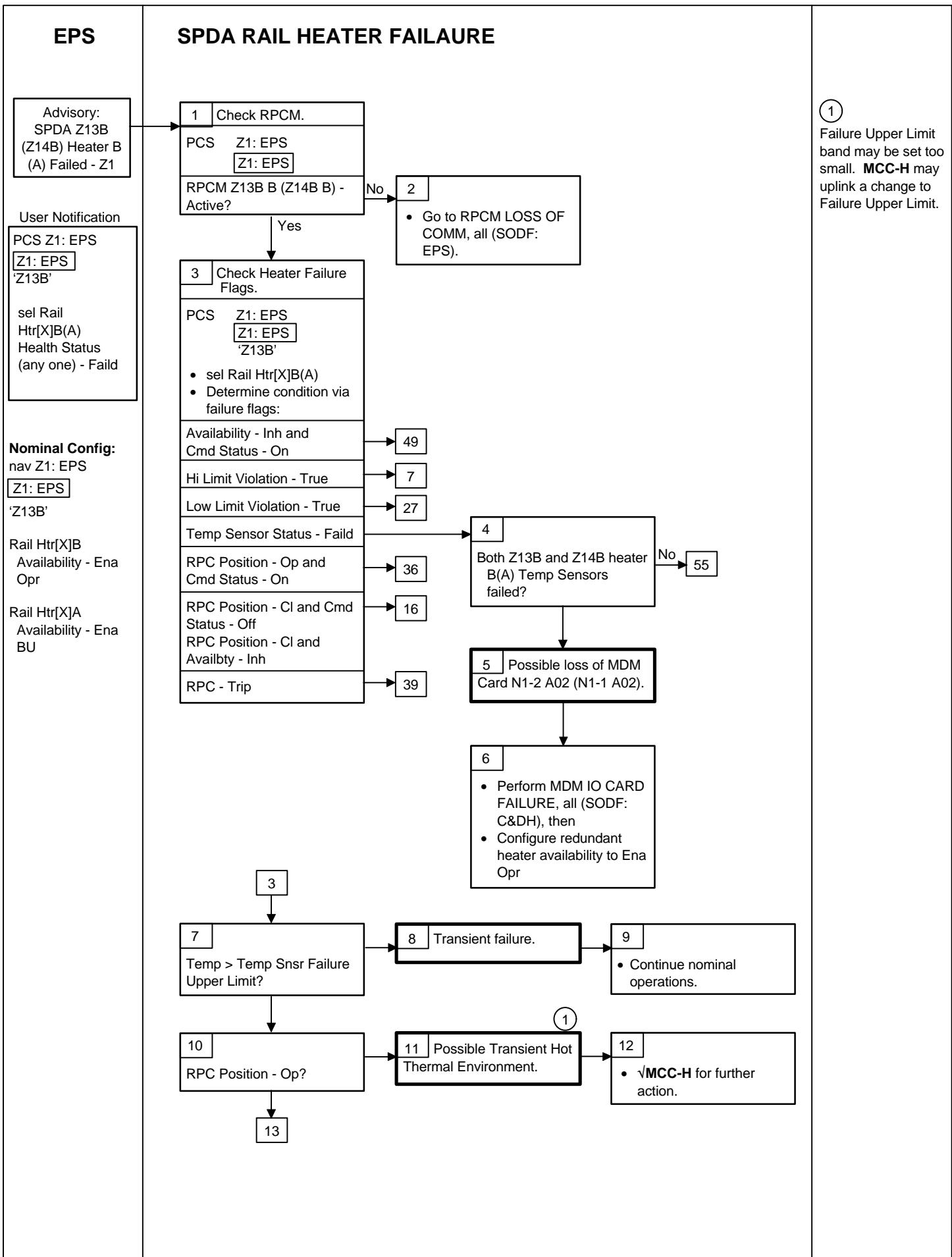
**FGB RACU 5 POWER LOSS (Cont)**



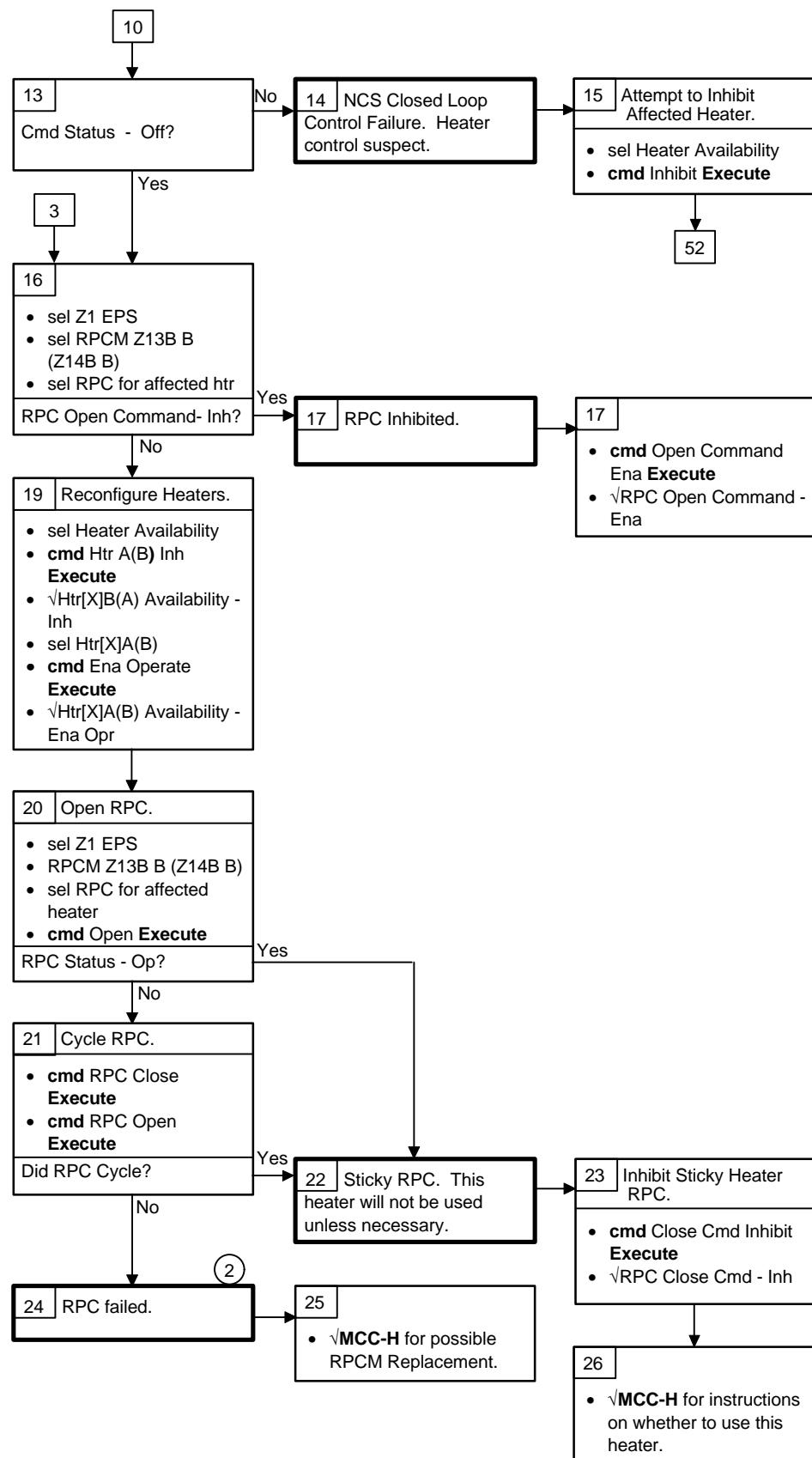
## FGB RACU 6 POWER LOSS (Cont)





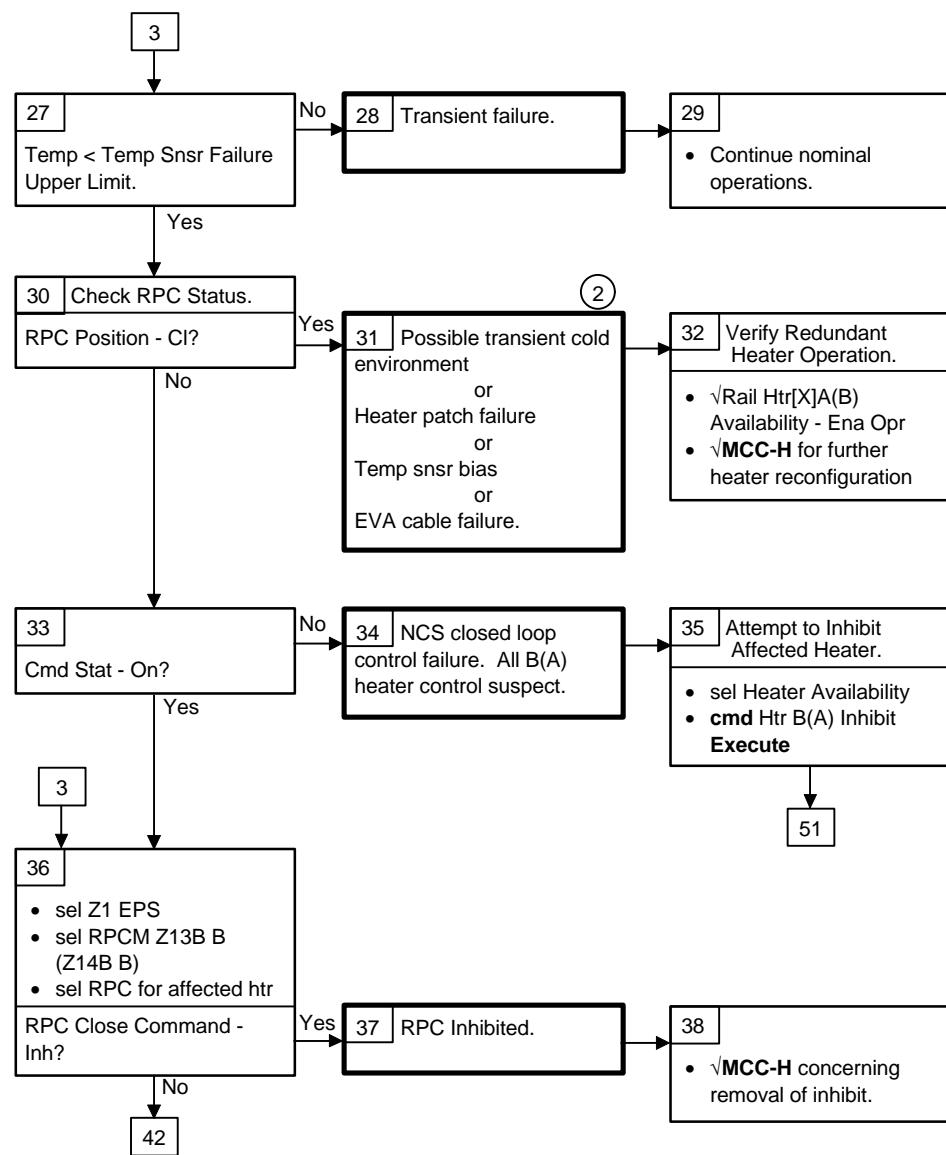


## SPDA RAIL HEATER FAILAURE (Cont)



(2) MCC-H will evaluate the possibility of touch temperature violations and consequences of leaving the heater on.

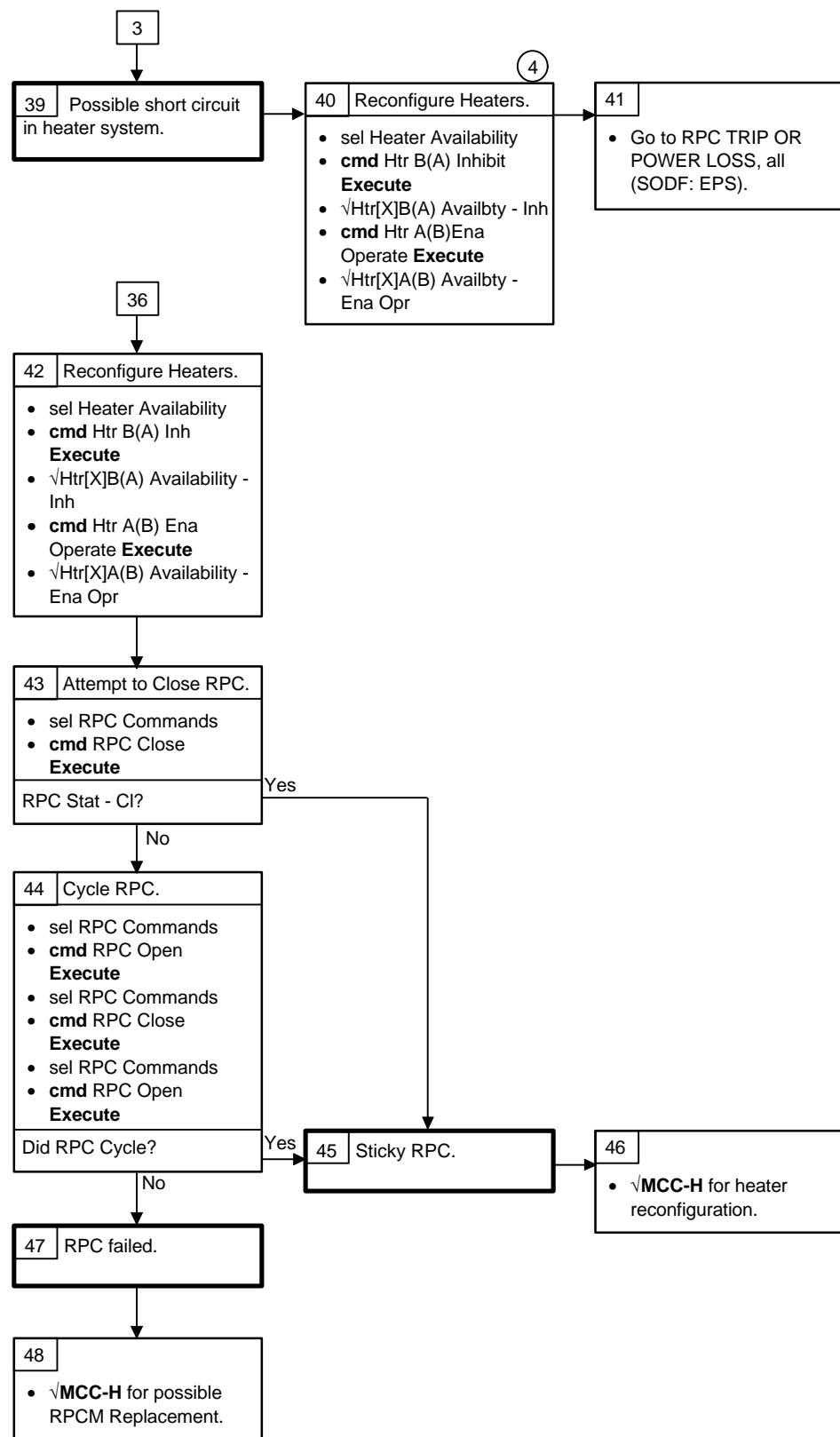
## SPDA RAIL HEATER FAILAURE (Cont)



(3)

A transient cold environment could require both B and A heaters to keep temperatures within limits. A heater pad debonding failure could also be the culprit in this case. If all B(A) temperatures do not appear to be rising properly, the failure could be in the EVA cable/connectors P135/J635 (B heaters) or P132/J632 (A heaters).

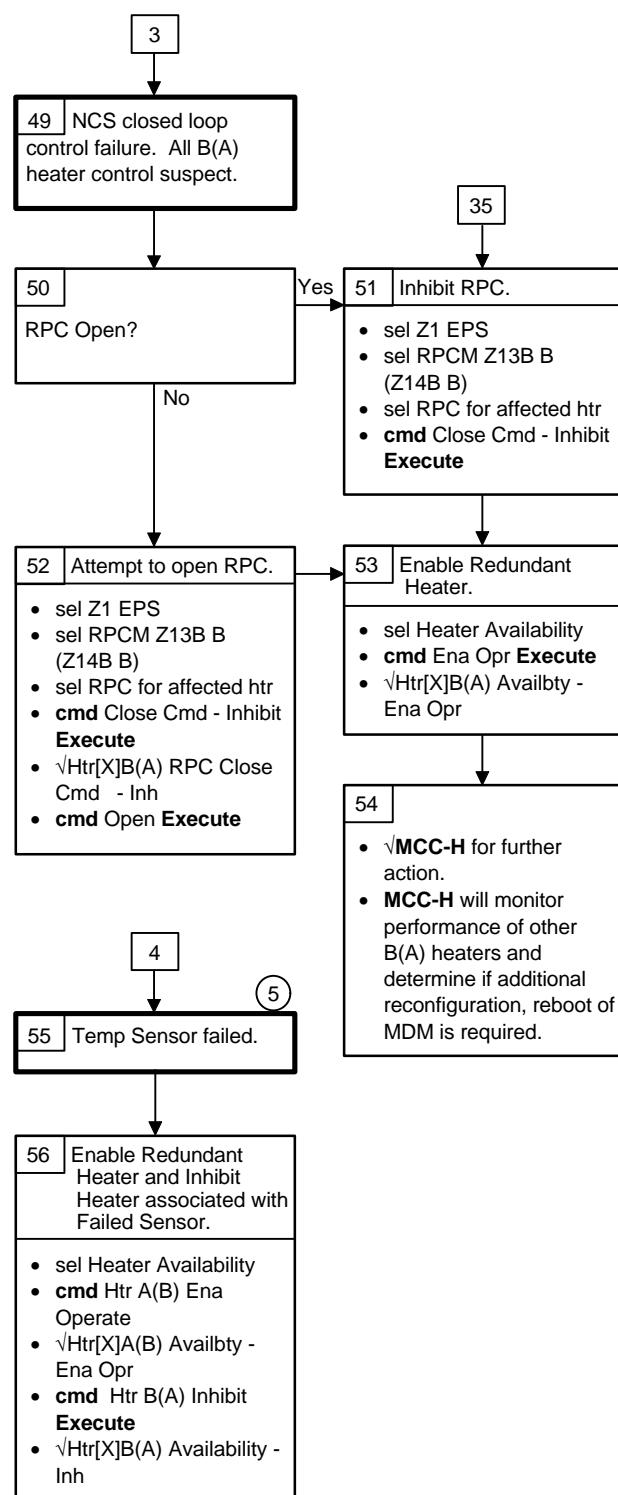
## SPDA RAIL HEATER FAILAURE (Cont)



(4)

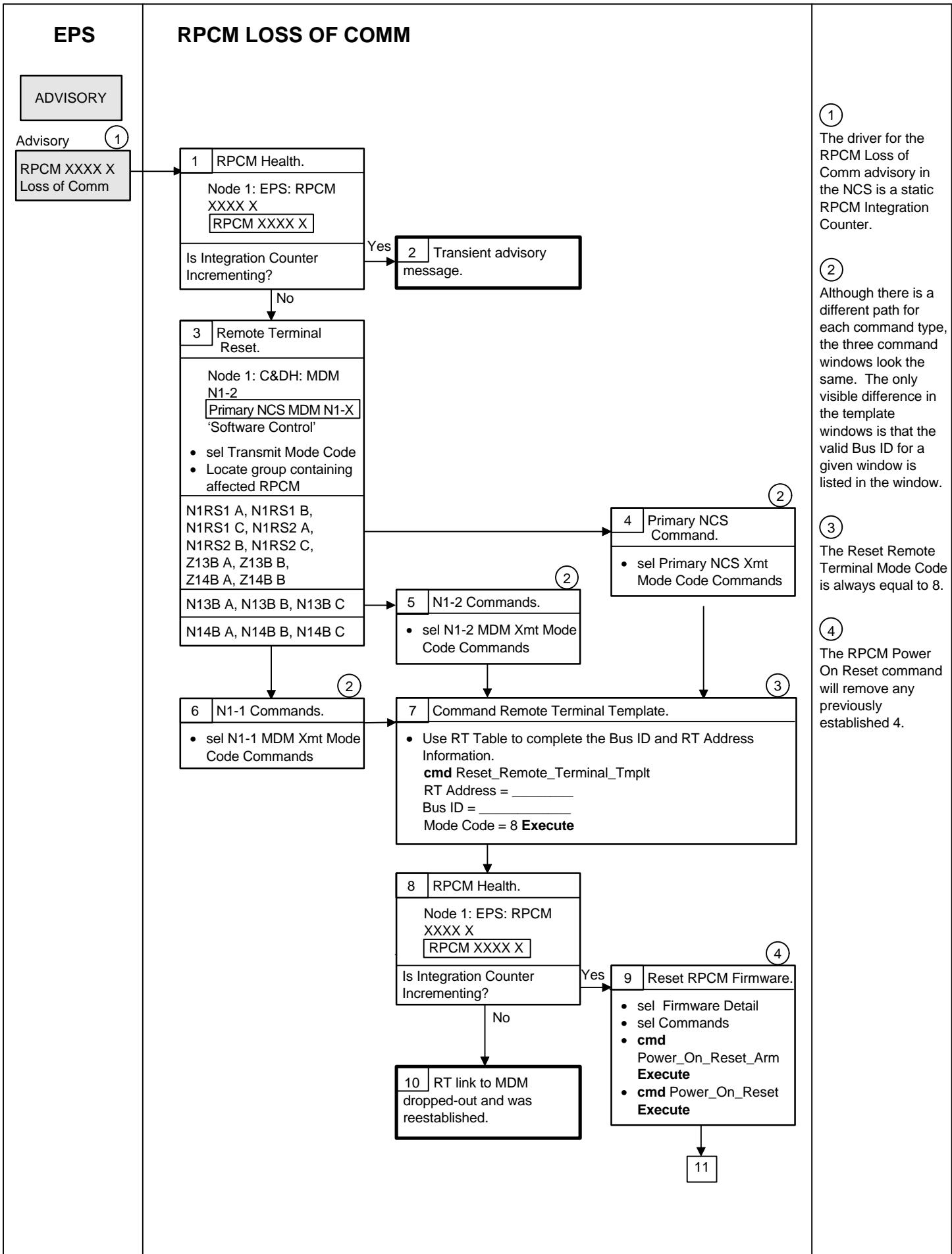
Since the RPC tripped, it will not be used again unless necessary.

## SPDA RAIL HEATER FAILAURE (Cont)



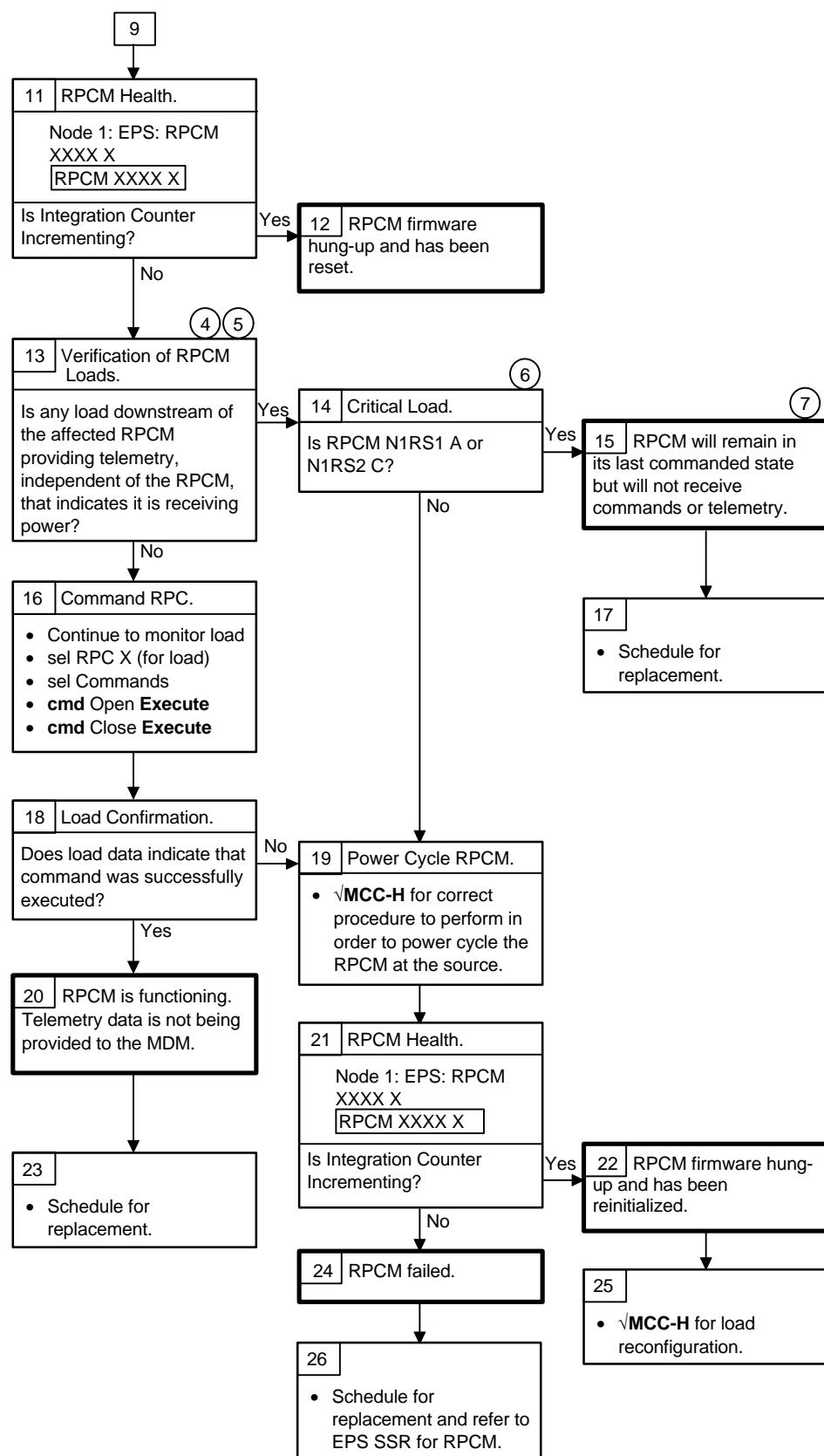
(5)

Temperature sensor has failed its range check. Software will command the heater off (default state).



EPS

## **RPCM LOSS OF COMM (Cont)**



④ Refer to Power Connectivity Table (SODF: Reference Data) for downstream loads.

(5) Possible confirming power indications include: MDM Frame Counter, Shell Temperatures, and Lights.

6  
RPCMs N1RS1 A and N1RS2 C provide power to the MDM N1-1 and MDM N1-2. Power cycling an RPCM with a known firmware problem may cause complete loss of the RPCM.

**7**  
Monitor upstream power indications since insight to the RPCM is lost. Refer to Power Bus Connectivity Reference Data for upstream power source - far left field, bold type.

**RPCM RT TABLE**

RPCM	Bus Name	Bus ID	RT Address	Reset Remote Terminal Mode Code
N1RS1 A	UB EPS 14	2	20	8
N1RS1 B	UB EPS 14	2	19	8
N1RS1 C	UB EPS 14	2	18	8
N1RS2 A	UB EPS 23	3	20	8
N1RS2 B	UB EPS 23	3	19	8
N1RS2 C	UB EPS 23	3	18	8
N13B A	SYS LAB 2	11	20	8
N13B B	SYS LAB 2	11	19	8
N13B C	SYS LAB 2	11	18	8
N14B A	SYS LAB 1	11	20	8
N14B B	SYS LAB 1	11	19	8
N14B C	SYS LAB 1	11	18	8
Z13B A	UB EPS 23	3	12	8
Z13B B	UB EPS 23	3	11	8
Z14B A	UB EPS 14	2	12	8
Z14B B	UB EPS 14	2	11	8

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## S&M PROCEDURES

HATCH MECHANISM MALFUNCTION.....	1-53
CBM MALFUNCTION.....	1-55

S&M

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S&M

## HATCH MECHANISM MALFUNCTION

### OBJECTIVE:

Identify failed Hatch mechanism.

### LOCATION:

Installed: U.S. Common Hatch Rib side

Stowed: None

### DURATION:

30 minutes

### TOOLS REQUIRED:

None

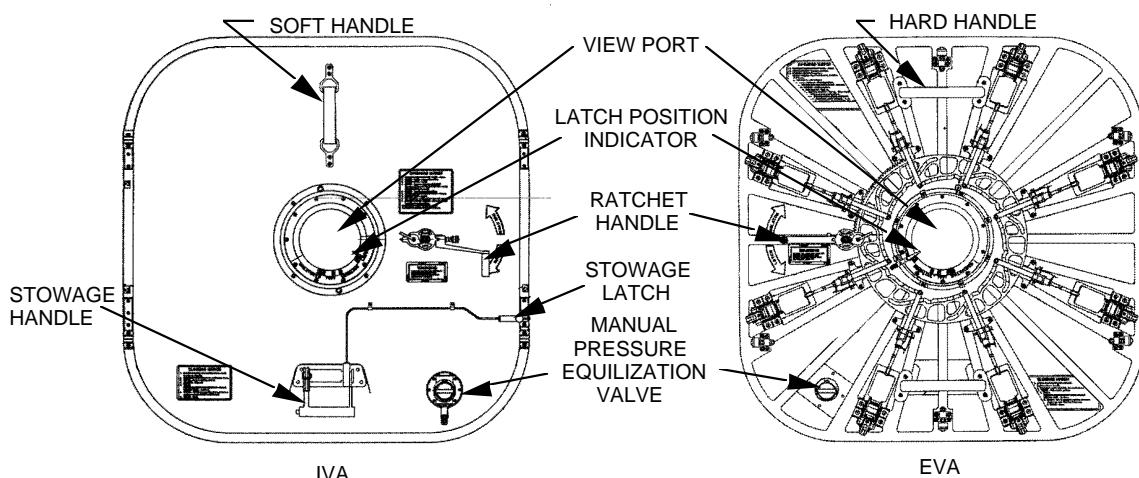


Figure 1.- Dome/Rib.

### **WARNING**

To ensure crewmembers have immediate ingress/egress between modules in case of emergency, Hatch latches are open.

### REMOVE

1. Close, but do not place Hatch against bulkhead.
2. Check Hatch for obvious bent or broken parts.
3. If no defect found, continue with procedure.  
If defect found, use appropriate maintenance procedure.

**NOTE**

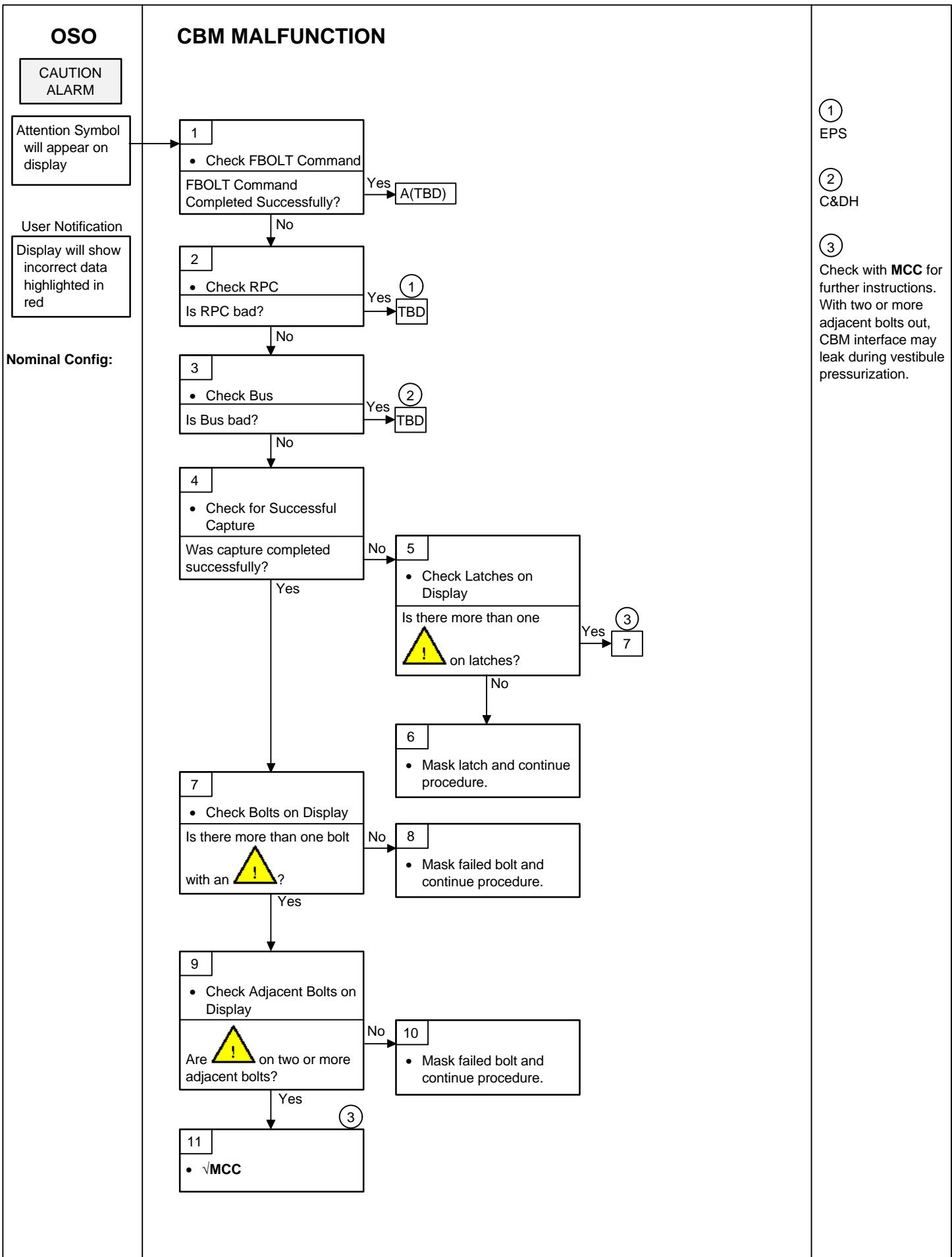
The next steps are to exercise Hatch mechanism while attempting to identify failed ORU.

4. Cycle hatch crank back and forth to attempt to identify failed ORU.
5. If unable to identify failed ORU, continue with procedure.
  - If able to identify failed ORU, use appropriate maintenance procedure.
6. Disconnect tension rods (eight) from drive mechanism by removing pip pins.
7. Secure loose ends of tension rods (eight) away from drive mechanism with Tape.
8. Cycle crank.
9. If crank does not bind, jam or have any other defect, continue procedure.
  - If crank binds, jams or has any other defect, attempt to identify if pinion gear or drive mechanism is failed.
10. If pinion gear is failed, remove and replace Hatch.
  - If pinion gear is not failed, remove and replace hatch drive mechanism.

**NOTE**

After each installation of tension rod, hatch crank is cycled to determine if newly installed tension rod/latch assembly is defective.

11. If failed tension rod/latch assembly determined, label failed tension rod/latch assembly.
12. Install tension rods one at a time (eight) to determine if they have failed.
13. Remove, repair, replace failed tension rod/latch assembly.



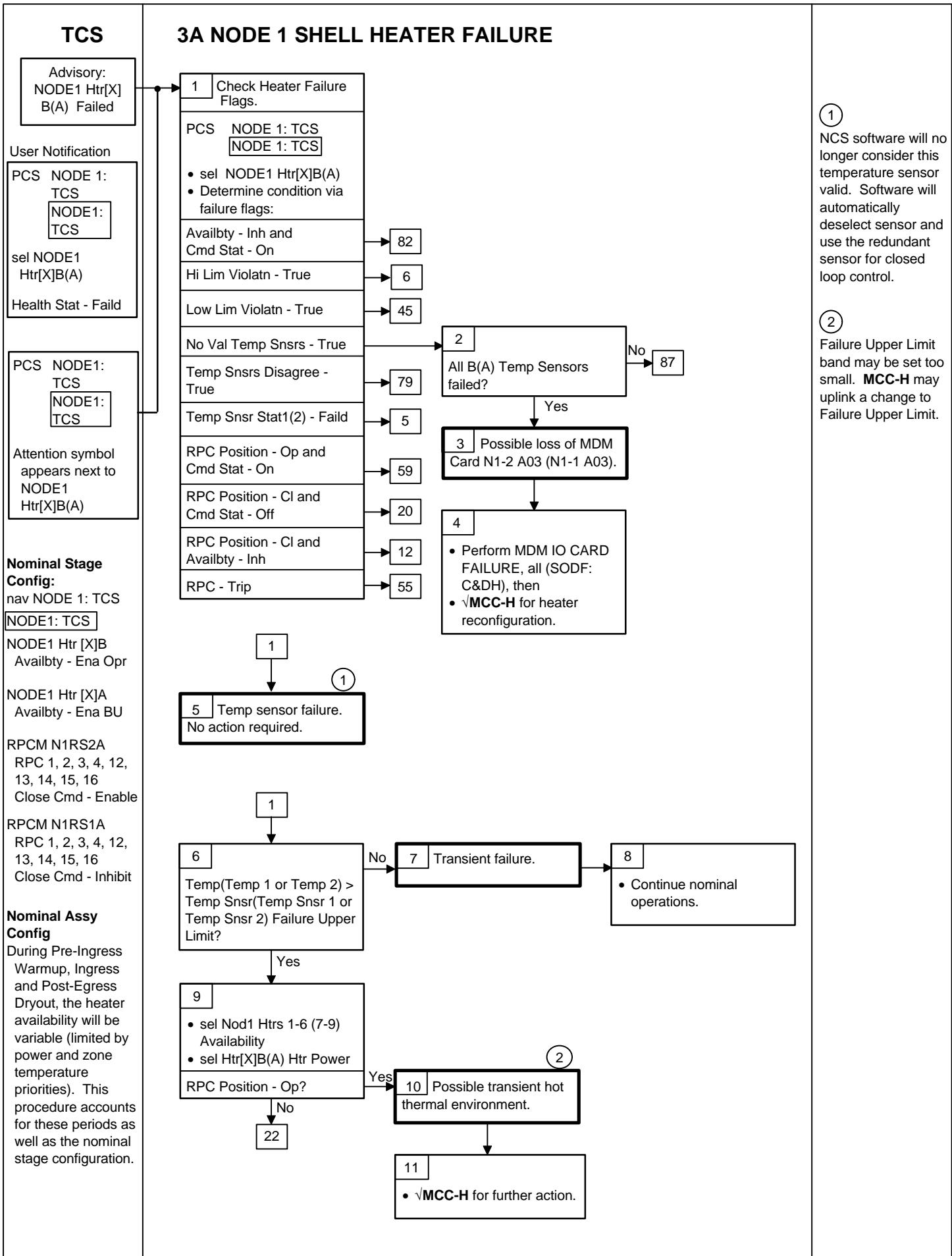
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TCS PROCEDURES

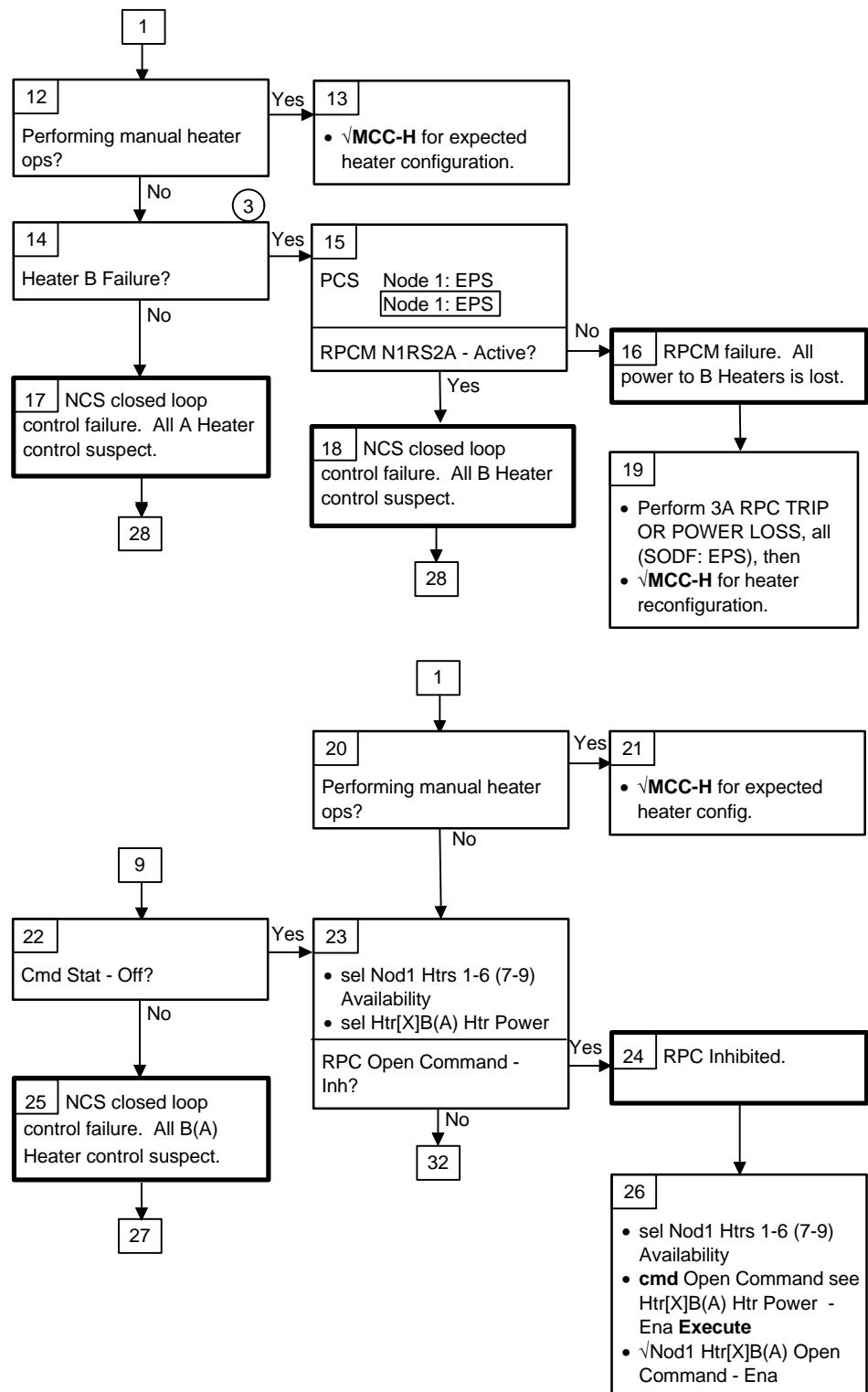
3A NODE 1 SHELL HEATER FAILURE.....	1-59
3A PMA 1 SHELL HEATER FAILURE .....	1-69
PMA 3 SHELL HEATER FAILURE.....	1-77
Z1 DOME HEATER FAILURE.....	1-84

TCS

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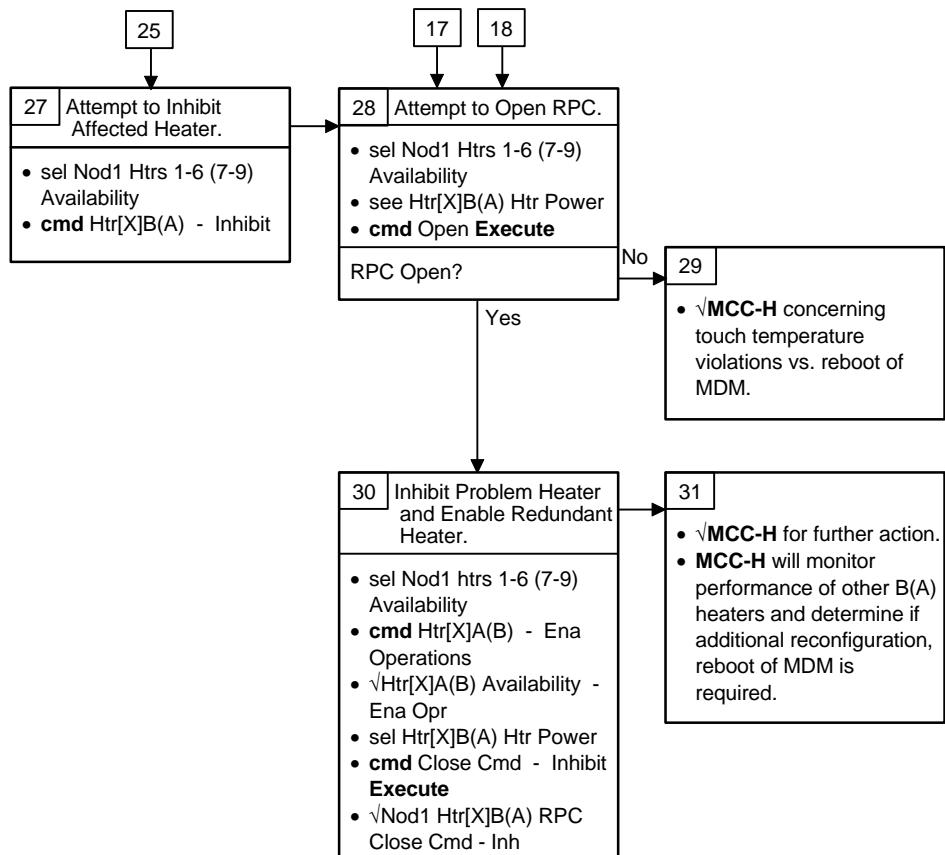


## 3A NODE 1 SHELL HEATER FAILURE (Cont)

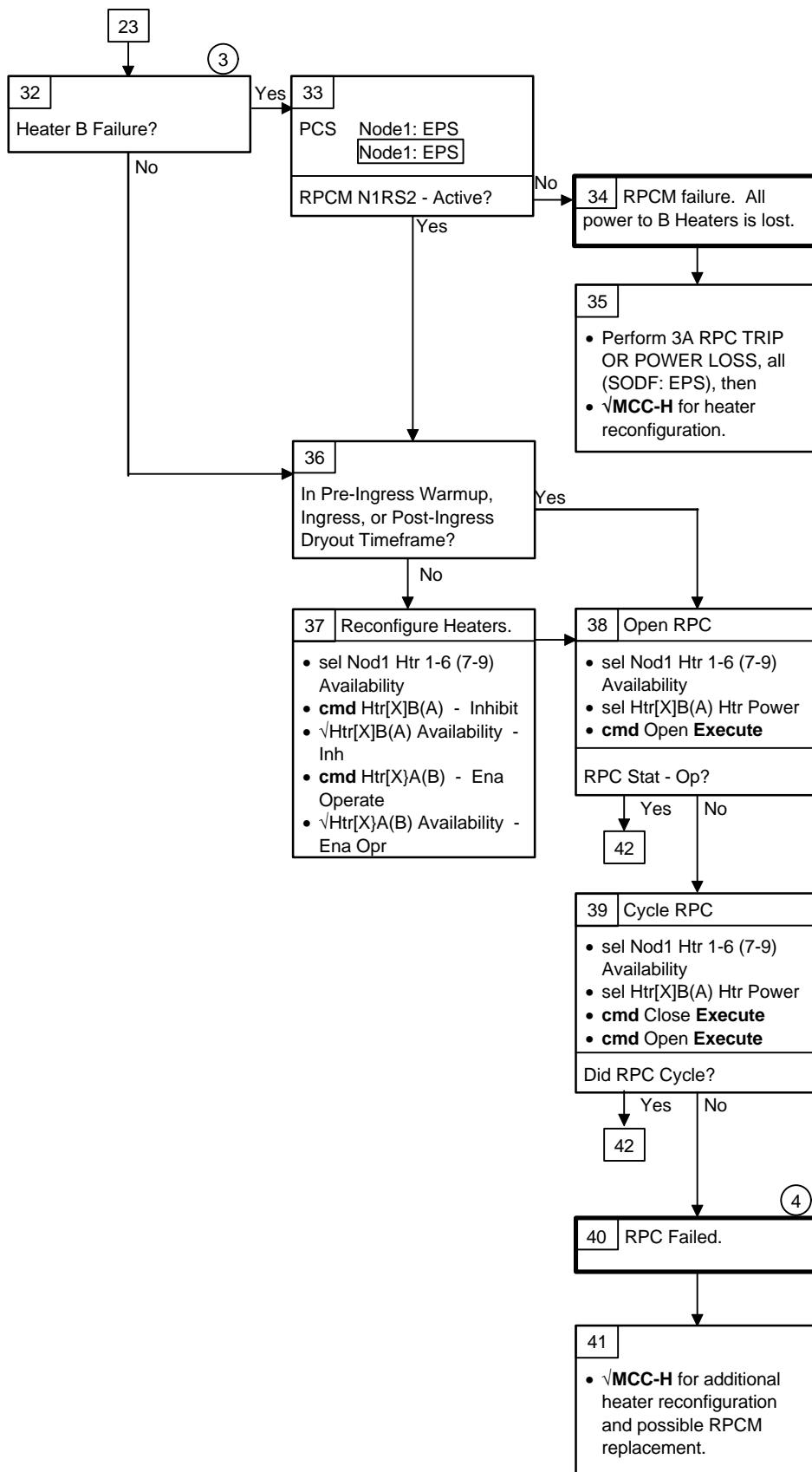


(3)

The A Heaters are connected to the same RPCM as MDM N1-1. The MDM Failure malfunction will be worked in that case. The B Heaters are not connected to the same RPCM as MDM N1-2; therefore, it is possible that the heater configuration problem could be detected before the RPCM failure.

**3A NODE 1 SHELL HEATER FAILURE (Cont)**

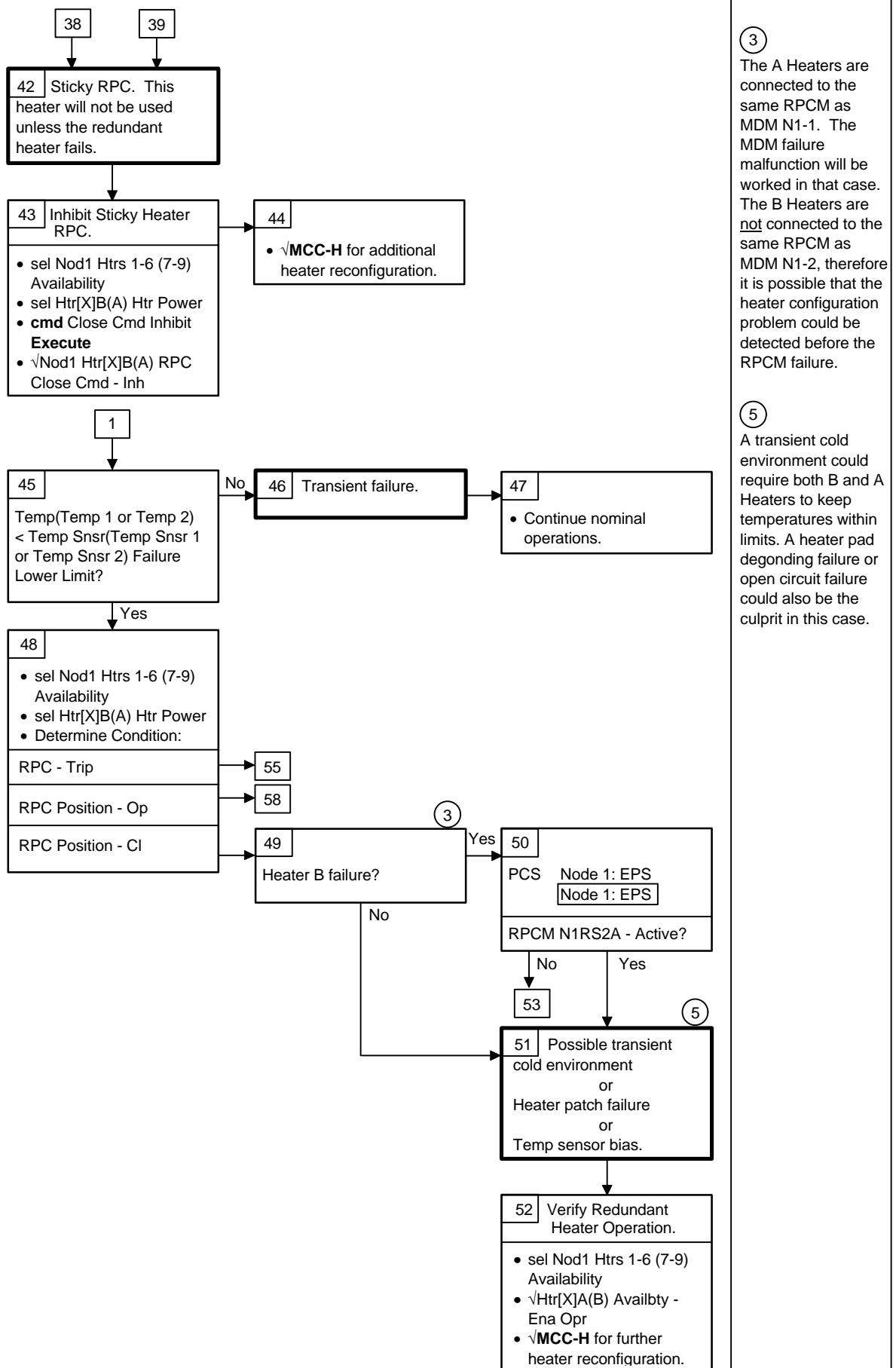
## 3A NODE 1 SHELL HEATER FAILURE (Cont)



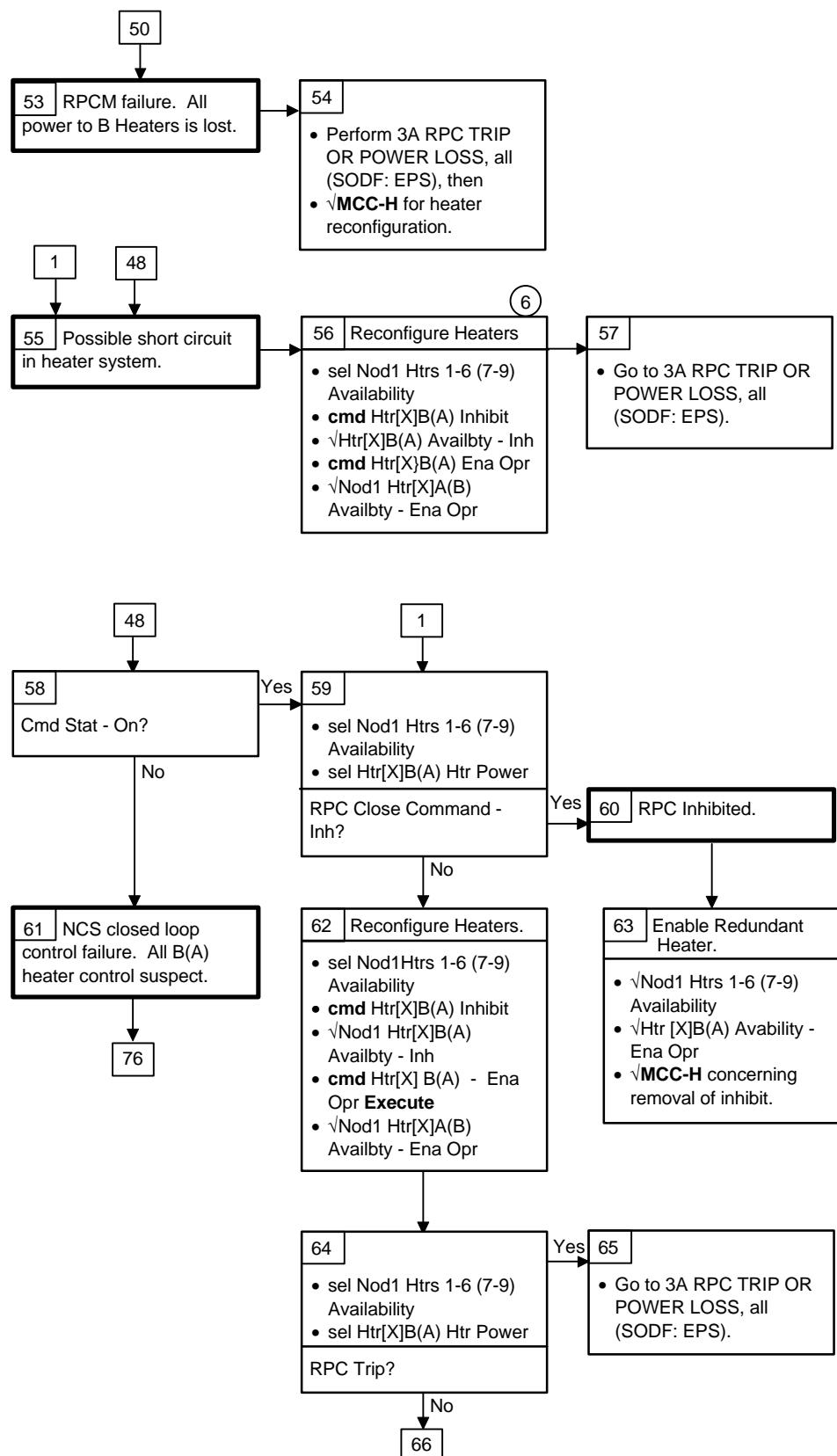
(3) The A Heaters are connected to the same RPCM as MDM N1-1. The MDM Failure malfunction will be worked in that case. The B Heaters are not connected to the same RPCM as MDM N1-2, therefore it is possible that the heater configuration problem could be detected before the RPCM failure.

(4) MCC-H will evaluate the possibility of touch temperature violations and the consequences of leaving the heater on

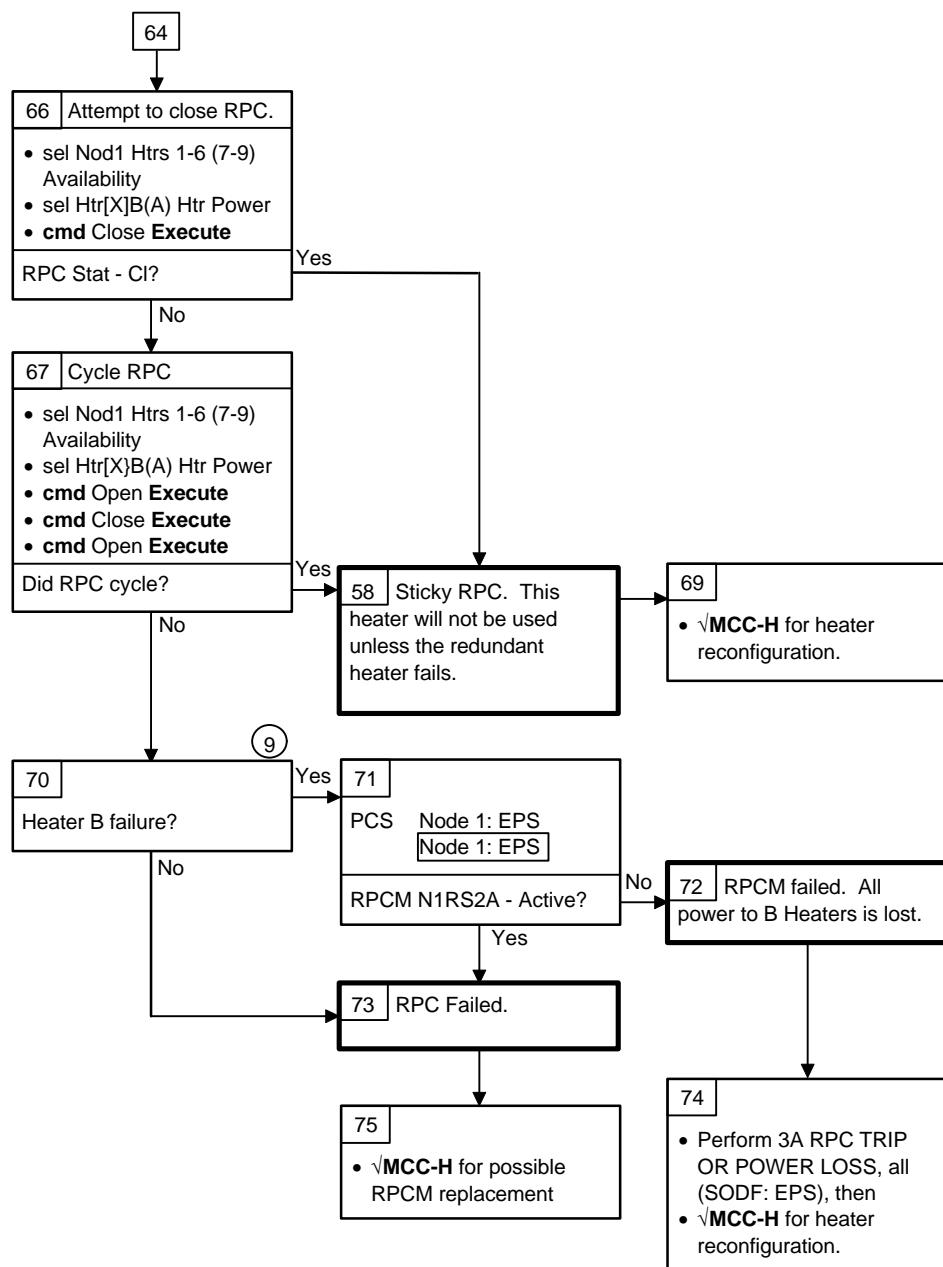
## 3A NODE 1 SHELL HEATER FAILURE (Cont)



## 3A NODE 1 SHELL HEATER FAILURE (Cont)



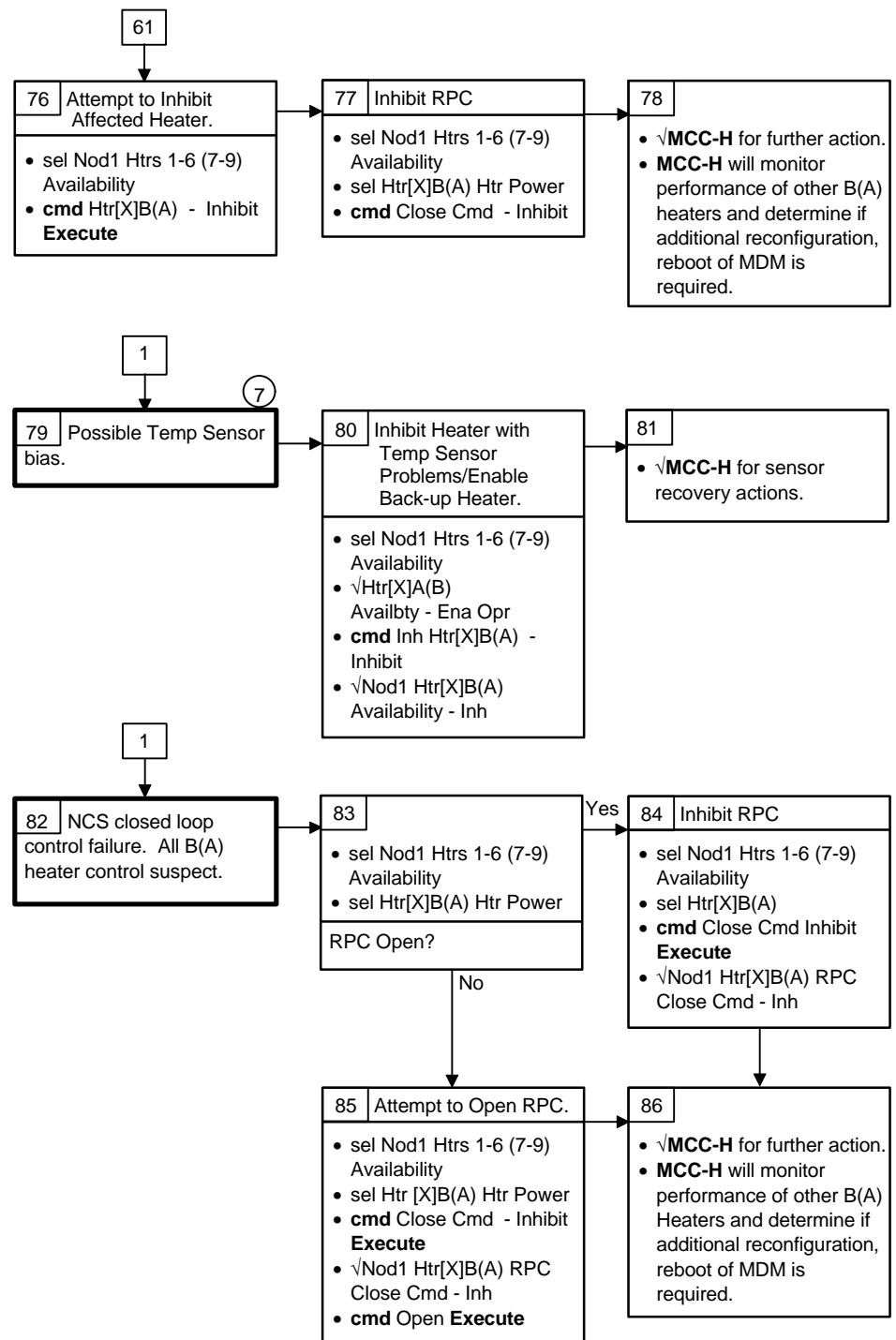
## 3A NODE 1 SHELL HEATER FAILURE (Cont)



(3)

The A Heaters are connected to the same RPCM as MDM N1-1. The MDM failure malfunction will be worked in that case. The B Heaters are not connected to the same RPCM as MDM N1-2, therefore it is possible that the heater configuration problem could be detected before the RPCM failure.

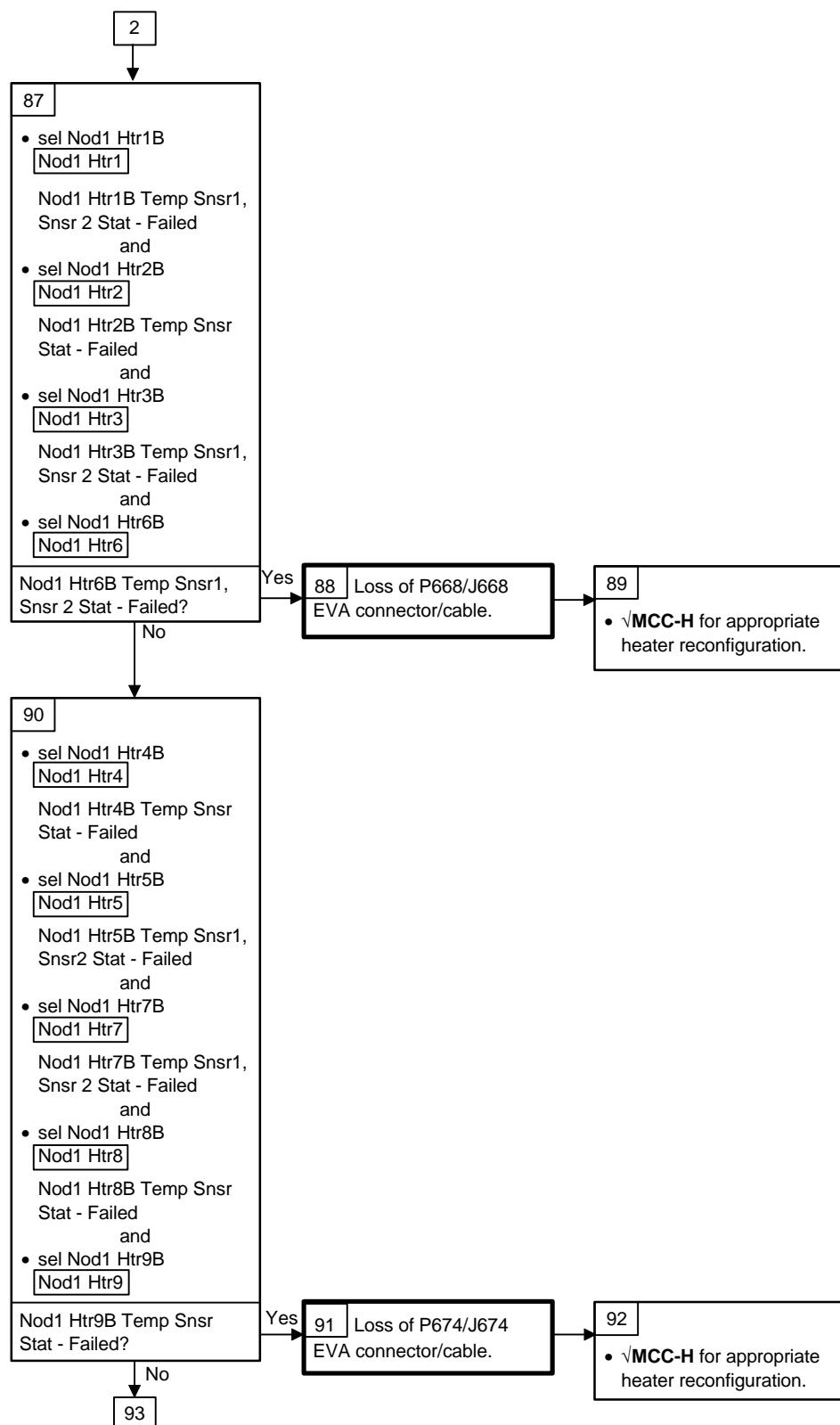
## 3A NODE 1 SHELL HEATER FAILURE (Cont)



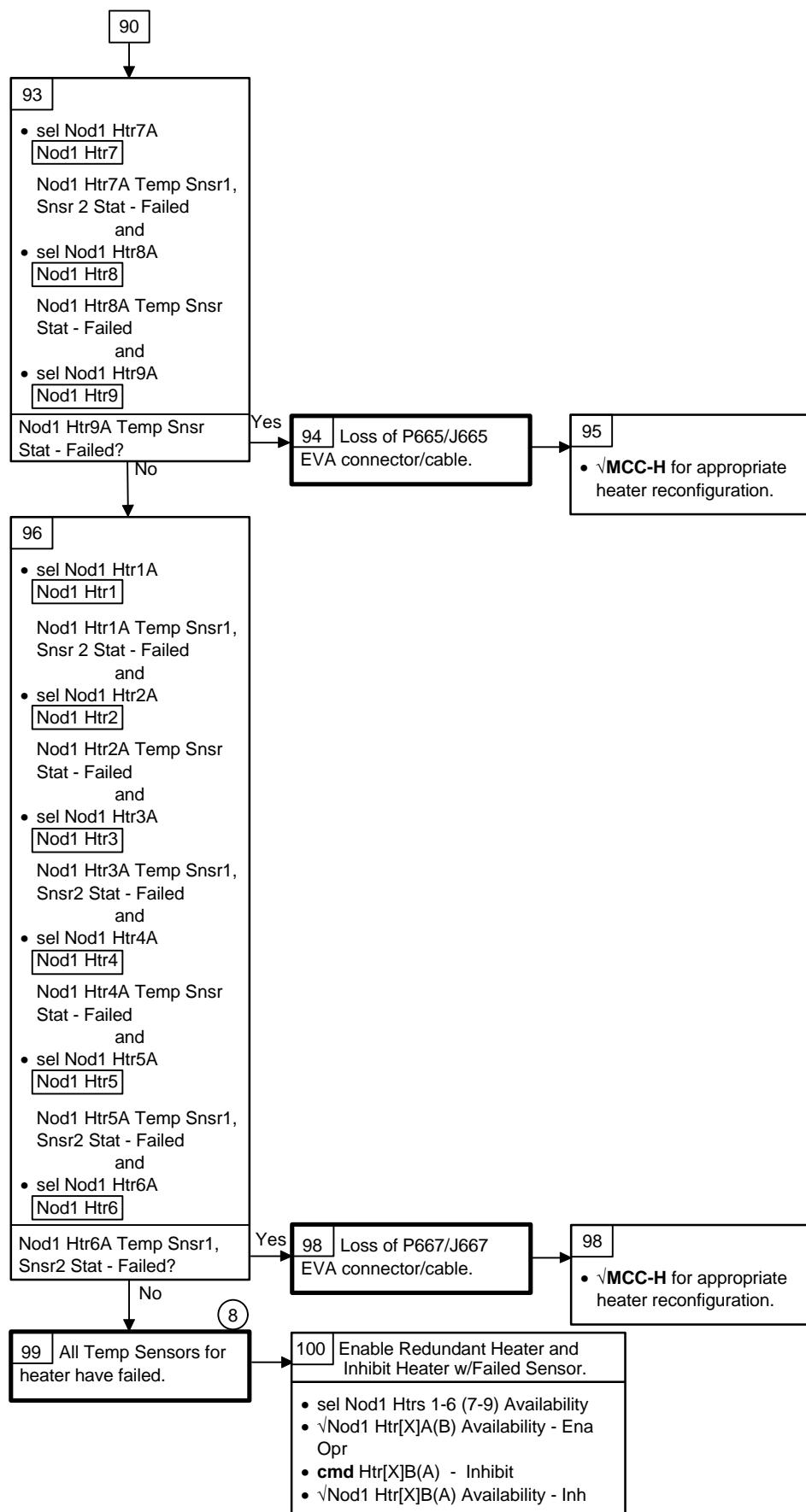
(7)

Temperature of one sensor is less than its lower setpoint, temperature of the redundant sensor is greater than its upper setpoint. Software will command the heater

## 3A NODE 1 SHELL HEATER FAILURE (Cont)

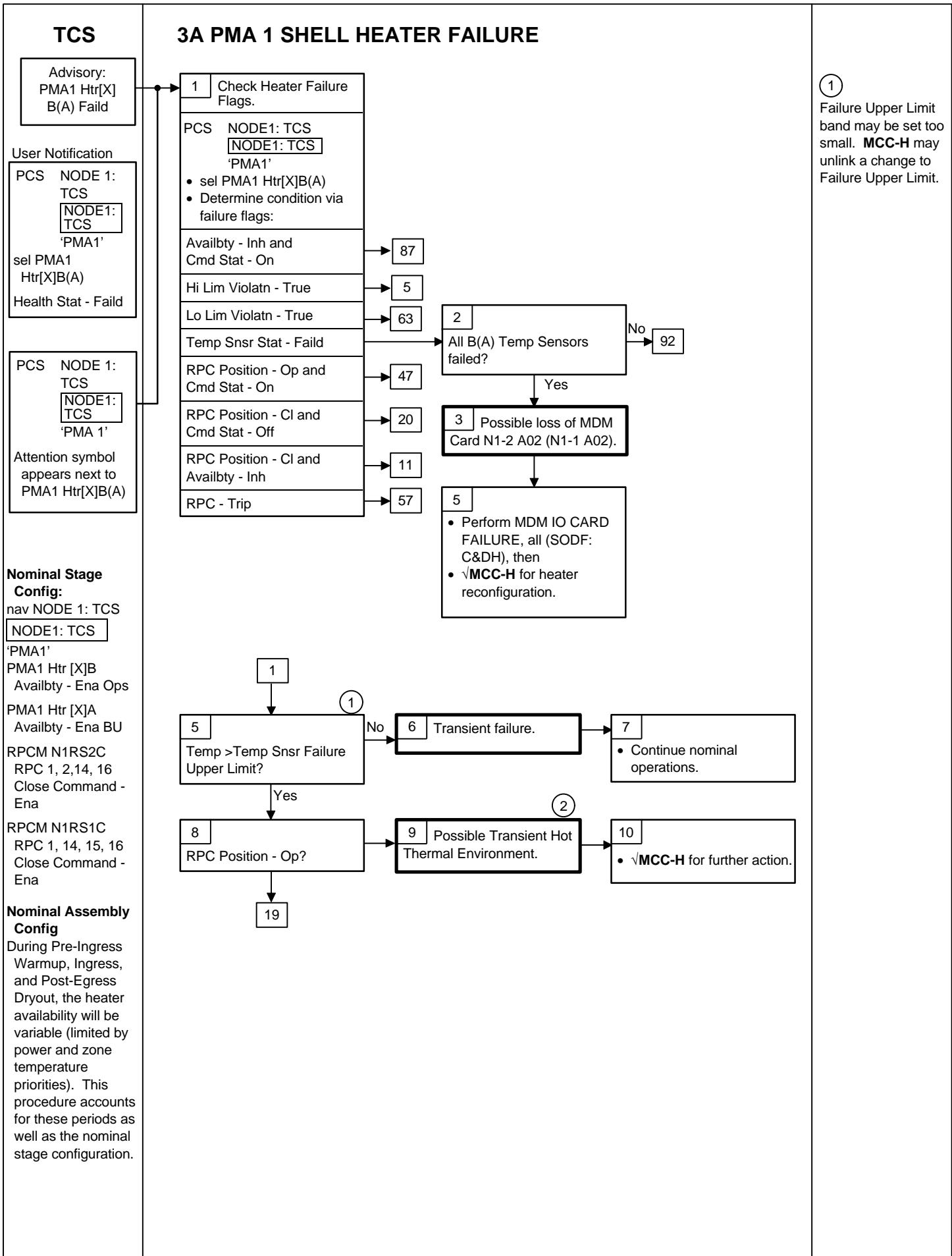


## 3A NODE 1 SHELL HEATER FAILURE (Cont)

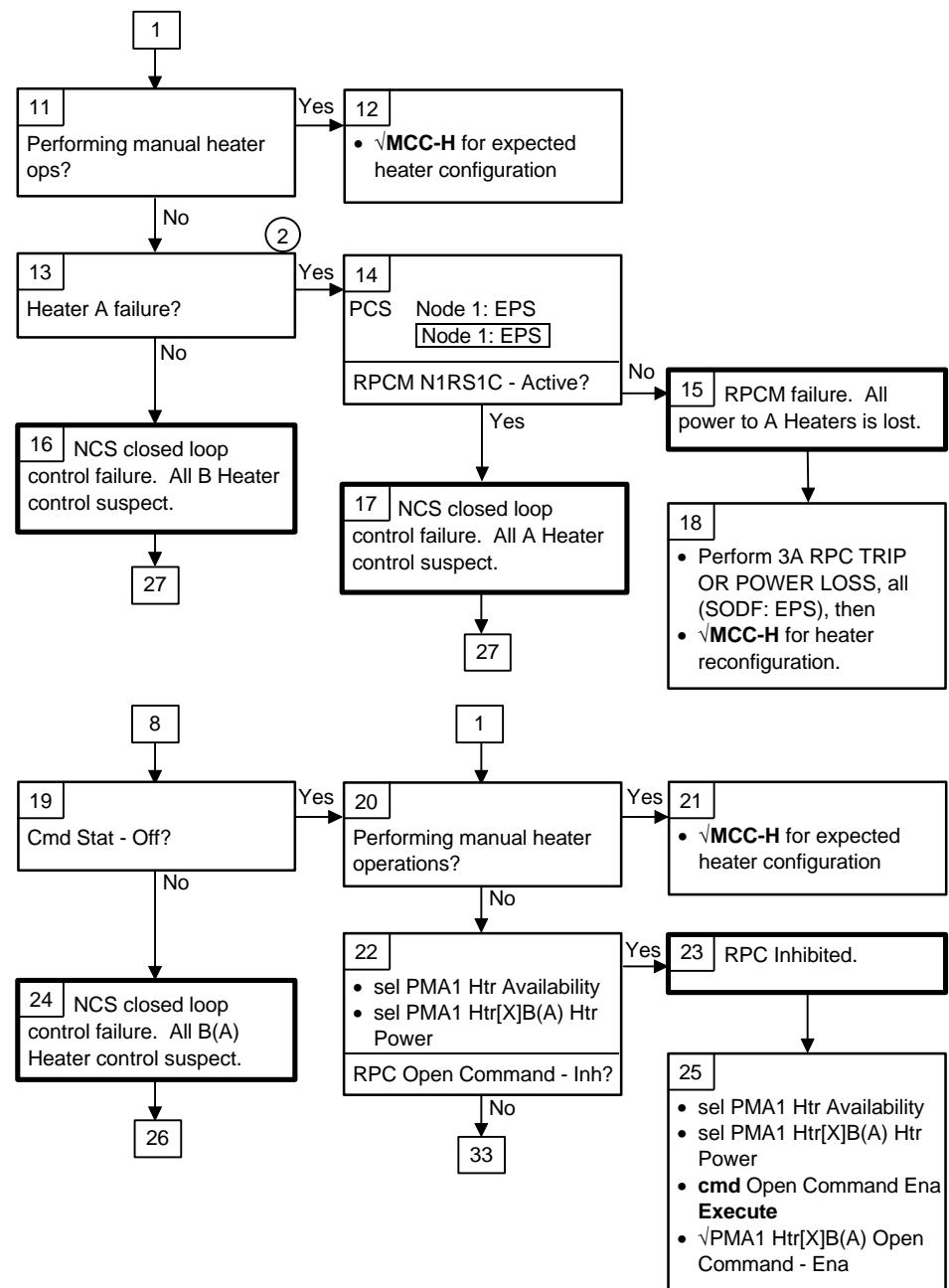


(8)

Temp sensor(s) have failed range check. Temp reading is either higher than +400°C or lower than -350°C. Software will command heater off (default state).

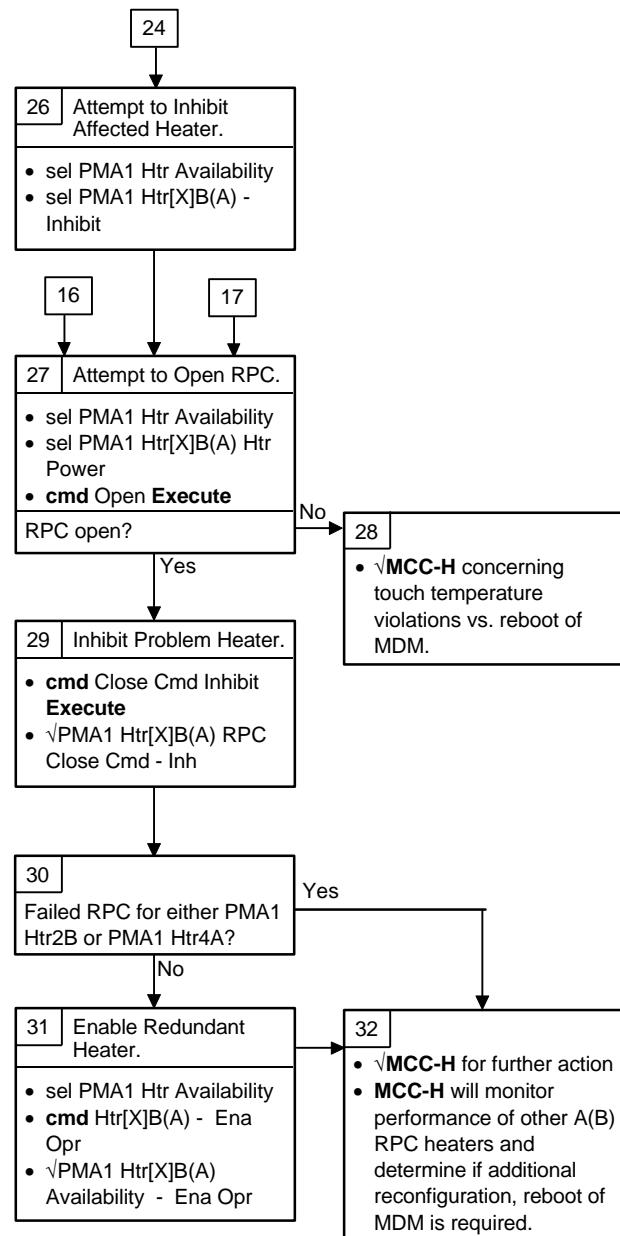


## 3A PMA 1 SHELL HEATER FAILURE (Cont)

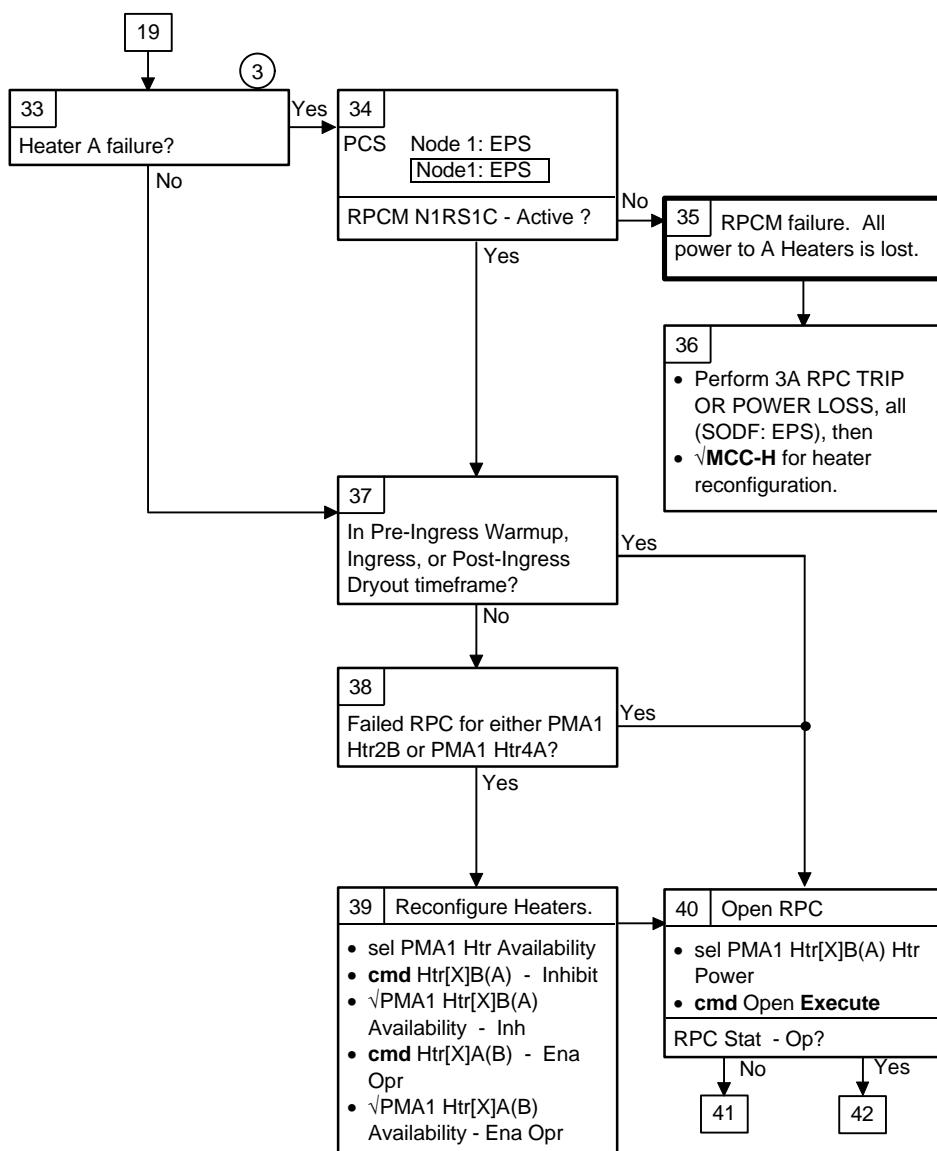


(2) The A Heaters are connected to the same RPCM as MDM N1-1. The MDM Failure malfunction will be worked in that case. The B Heaters are not connected to the same RPCM as MDM N1-2, therefore it is possible that the heater configuration problem could be detected before the RPCM failure.

## 3A PMA 1 SHELL HEATER FAILURE (Cont)

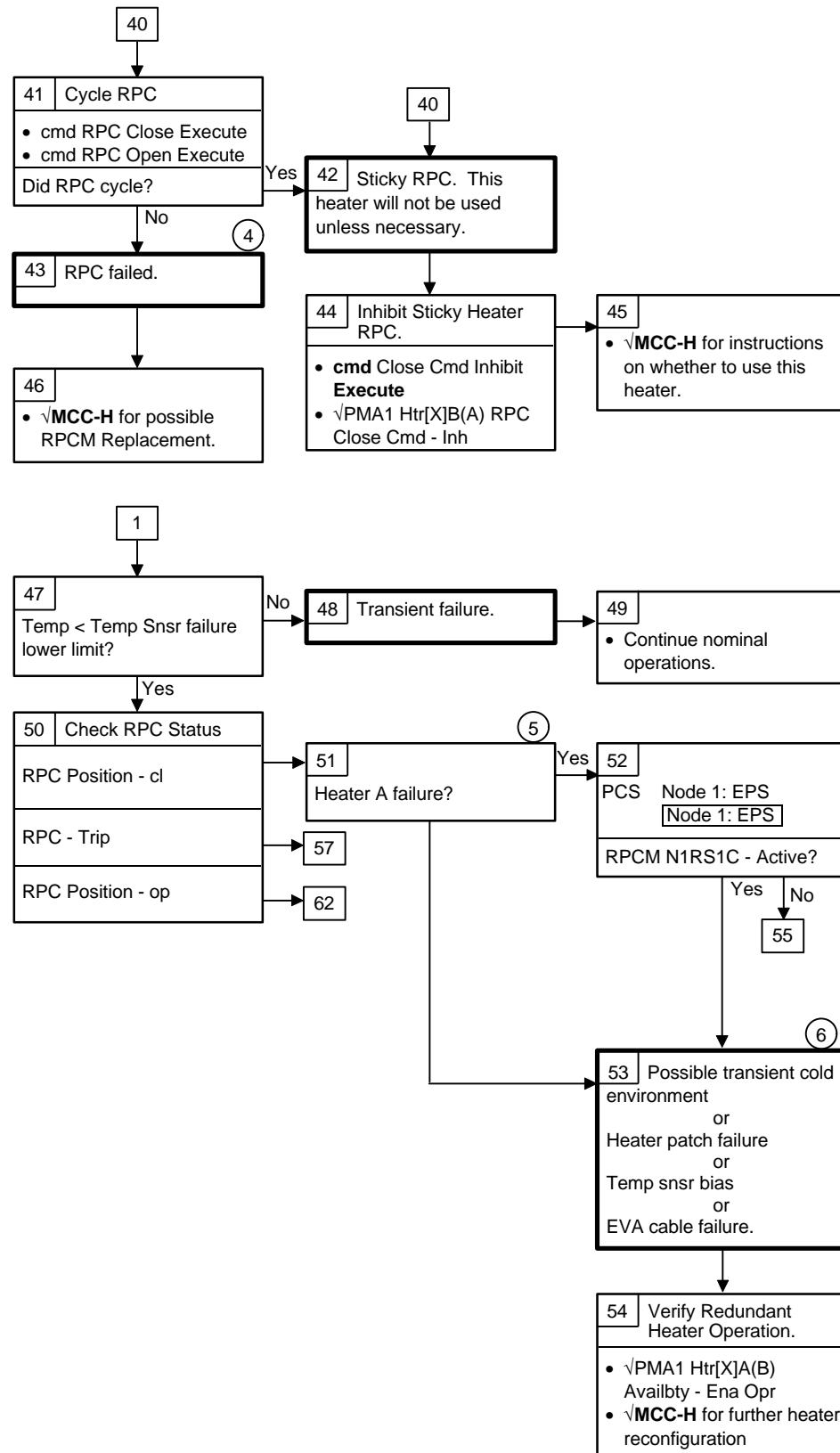


## 3A PMA 1 SHELL HEATER FAILURE (Cont)



(3) The B Heaters are connected to the same RPCM as MDM N1-2. The MDM Failure malfunction will be worked in that case. The A heaters are not connected to the same RPCM as MDM N1-1; therefore, it is possible that the heater configuration problem could be detected before the RPCM failure.

## 3A PMA 1 SHELL HEATER FAILURE (Cont)

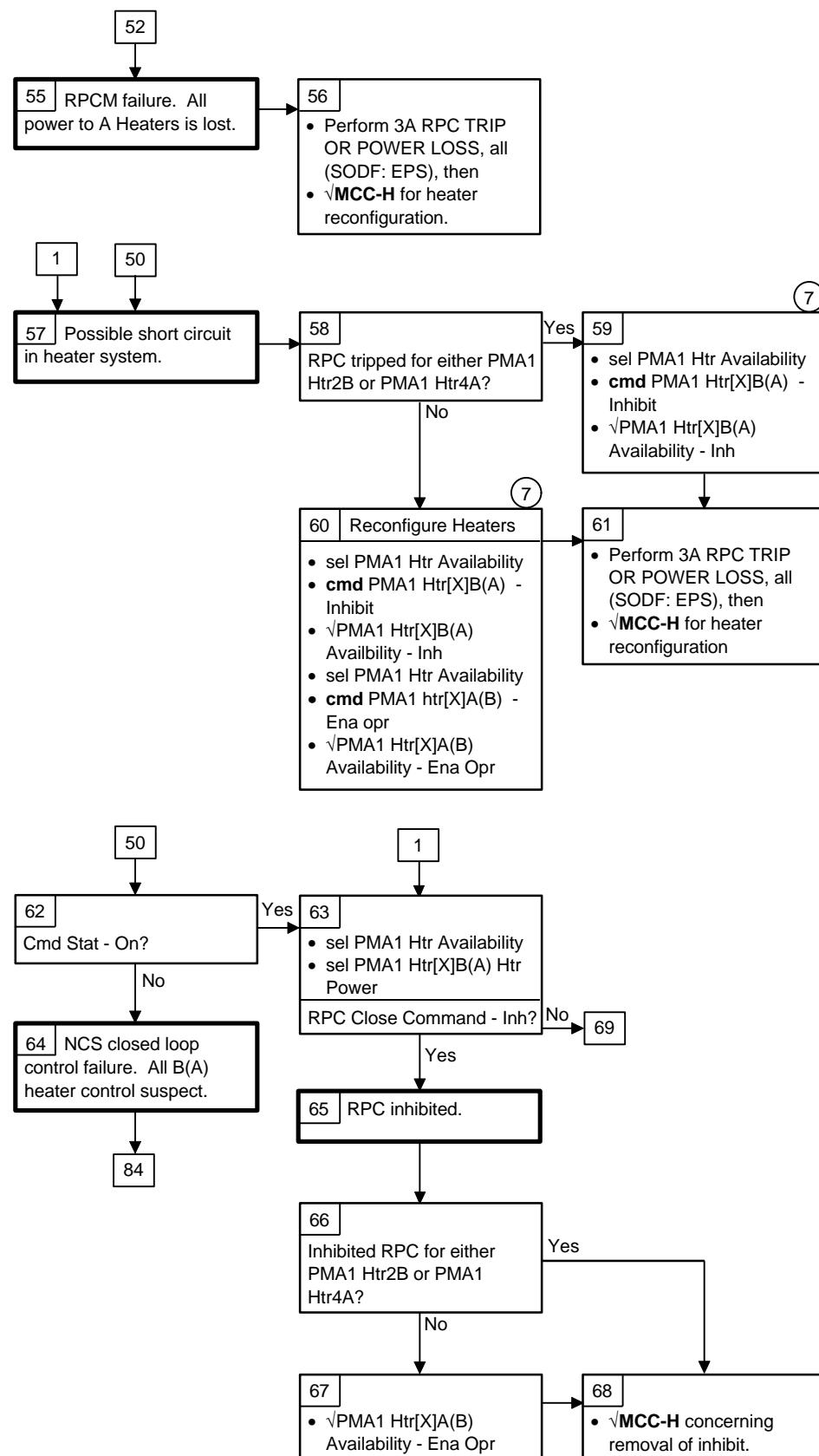


(4) MCC-H will evaluate the possibility of touch temperature violations and consequences of leaving the heater on.

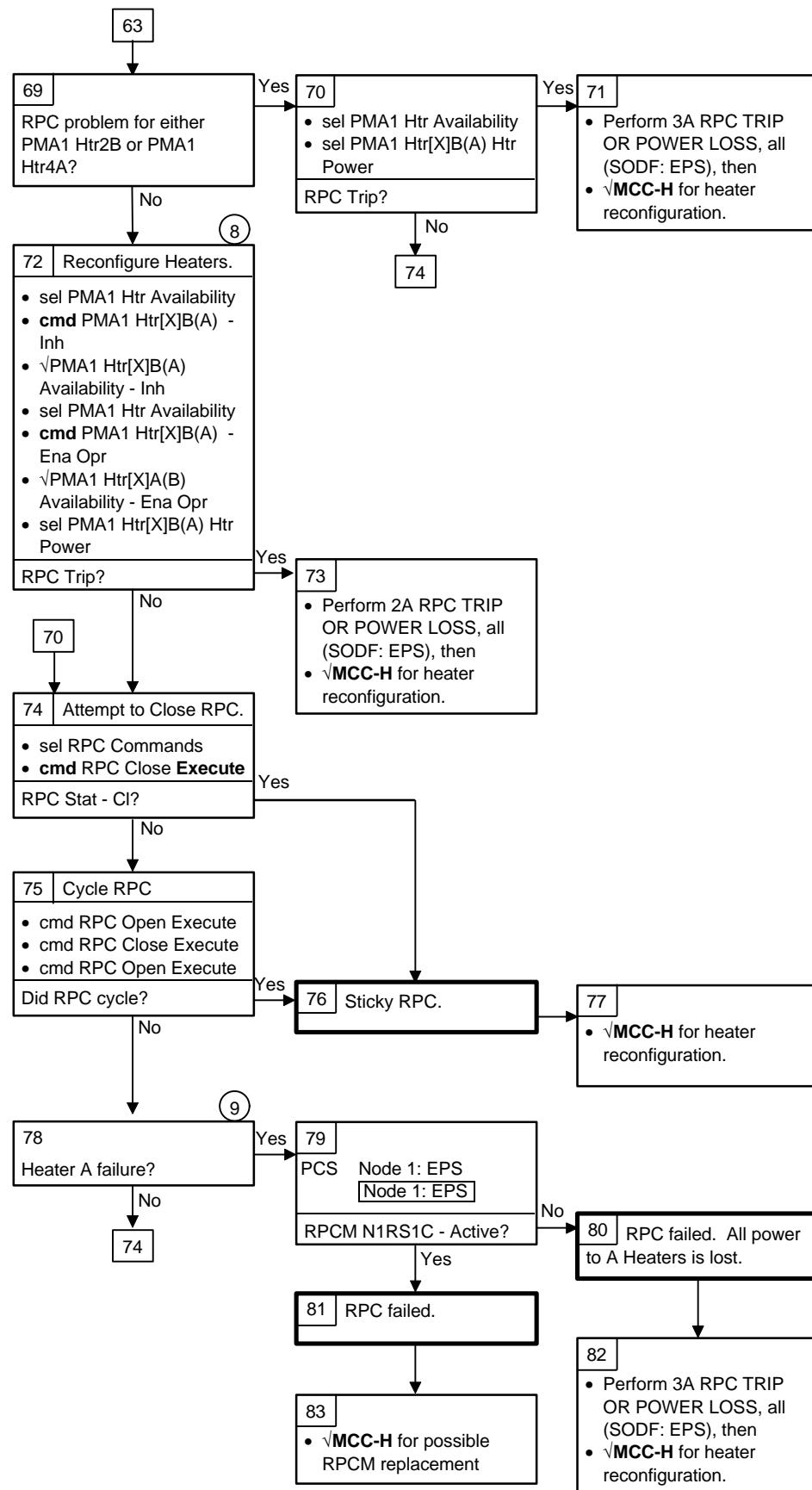
(5) The B Heaters are connected to the same RPCM as MDM N1-2. The MDM failure malfunction will be worked in that case. The A Heaters are not connected to the same RPCM as MDM N1-2; therefore, it is possible that the heater configuration problem could be detected before the RPCM failure.

(6) A transient cold environment could require both B and A heaters to keep temperatures within limits. A heater pad debonding failure could also be the culprit in this case. If all B(A) temperatures do not appear to be rising properly, the failure could be in the EVA cable/connectors P672/J672 (B Heaters) or P666/J666 (A Heaters).

## 3A PMA 1 SHELL HEATER FAILURE (Cont)



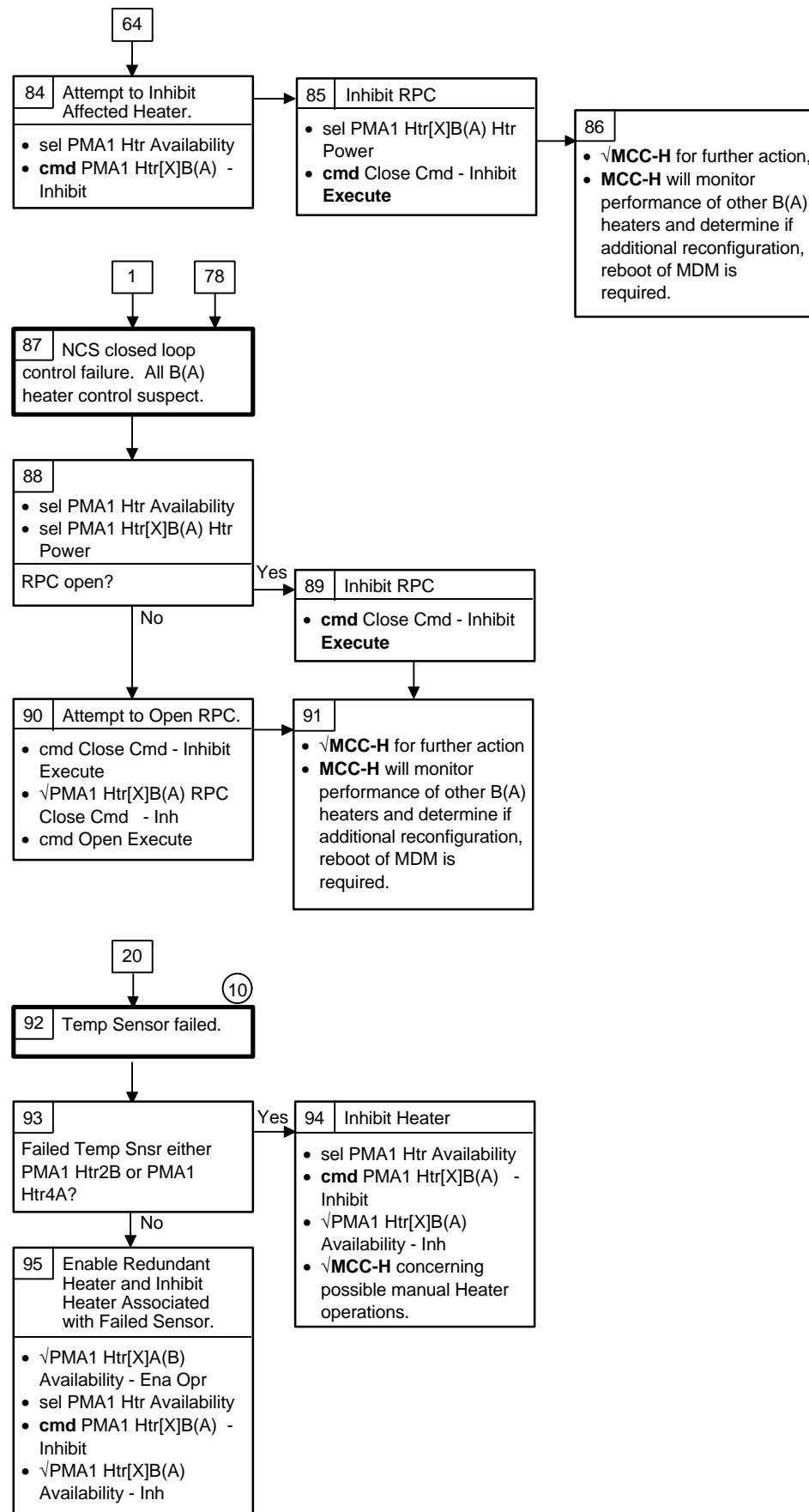
## 3A PMA 1 SHELL HEATER FAILURE (Cont)



(8)  
Since the shell is in a cold condition, the back-up heater should be enabled.

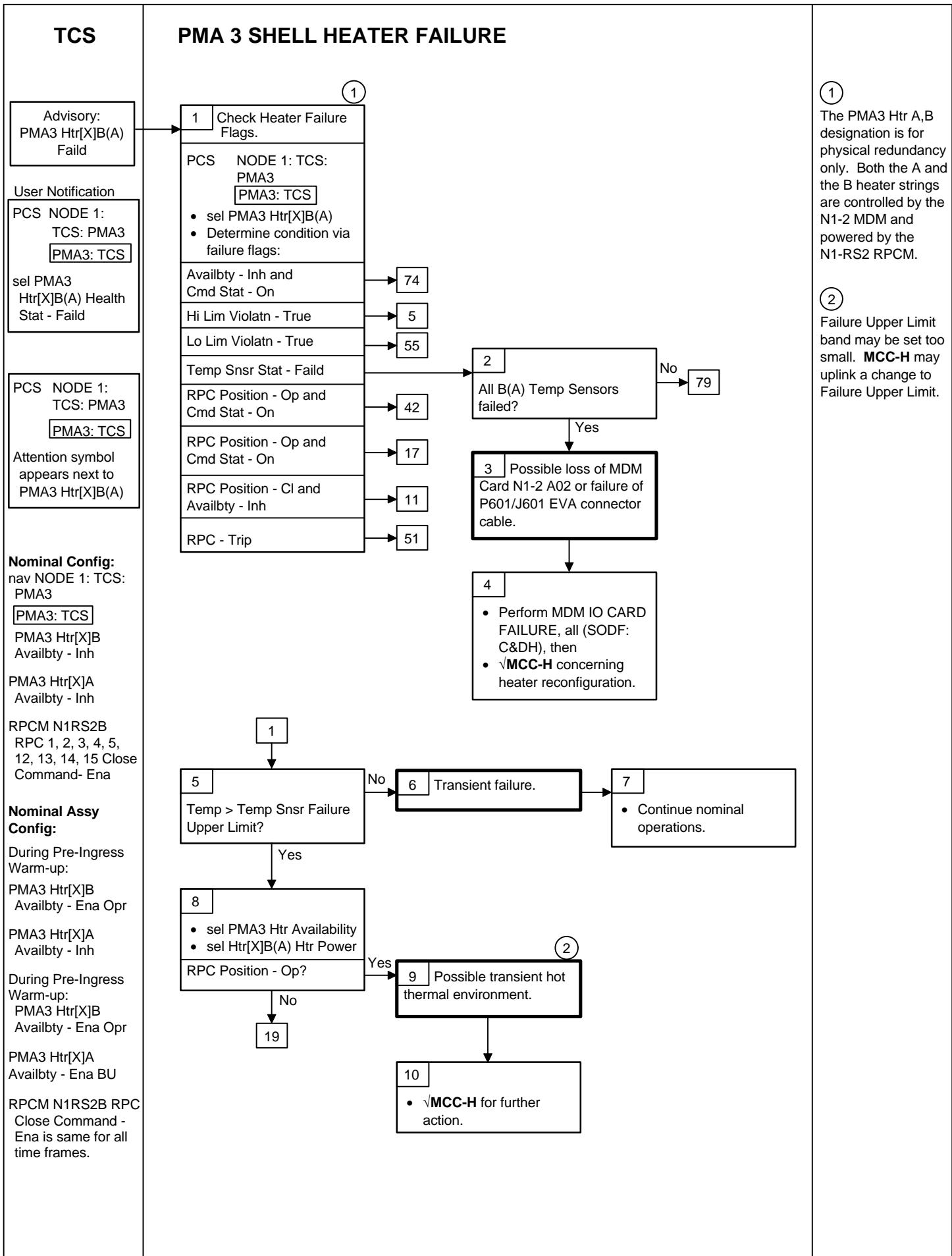
(9)  
The B Heaters are connected to the same RPCM as MDM N1-2. The MDM failure malfunction will be worked in that case. The A Heaters are not connected to the same RPCM as MDM N1-1; therefore, it is possible that the heater configuration problem could be detected before the RPCM failure.

## 3A PMA 1 SHELL HEATER FAILURE (Cont)

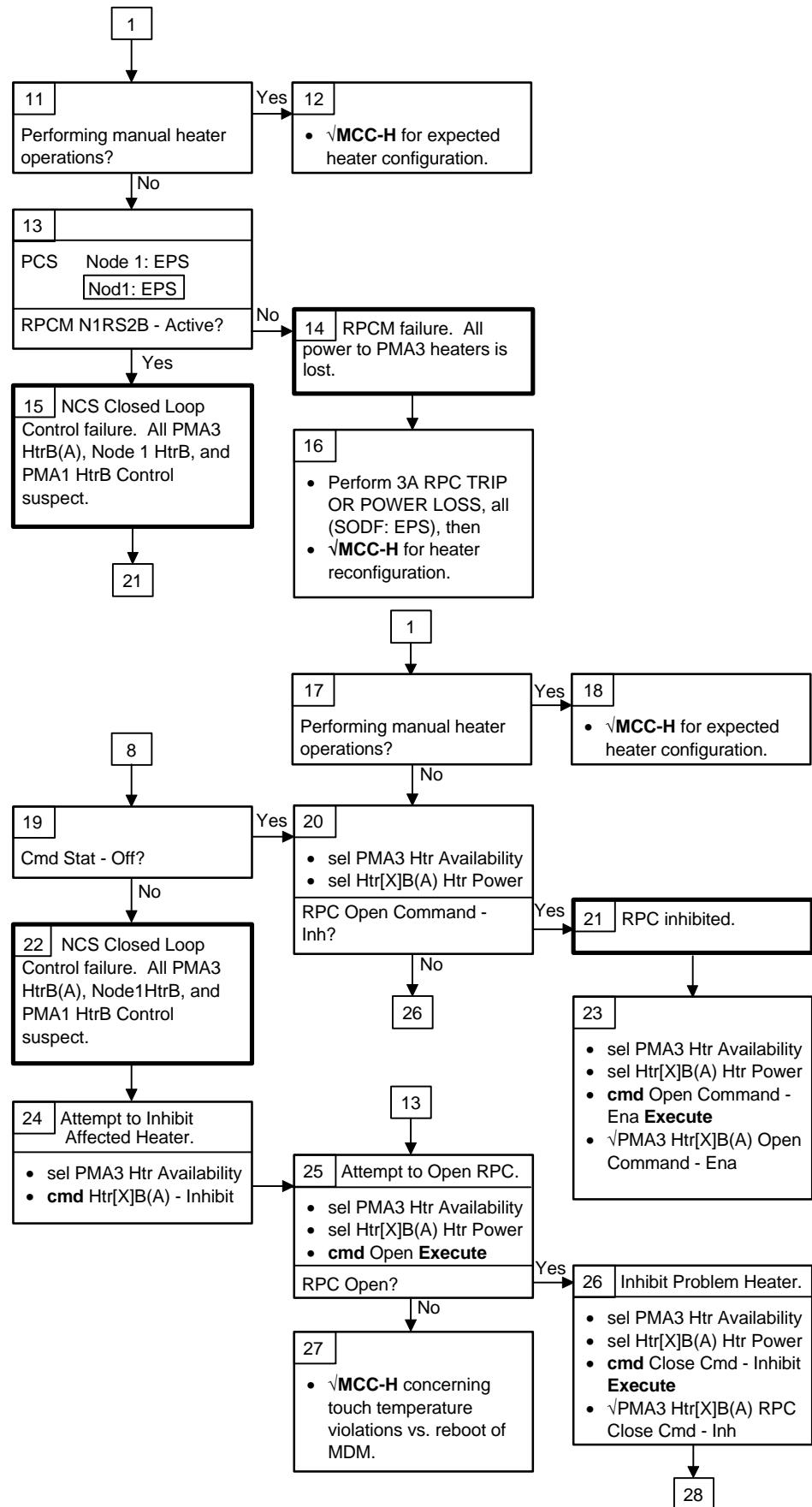


(10)

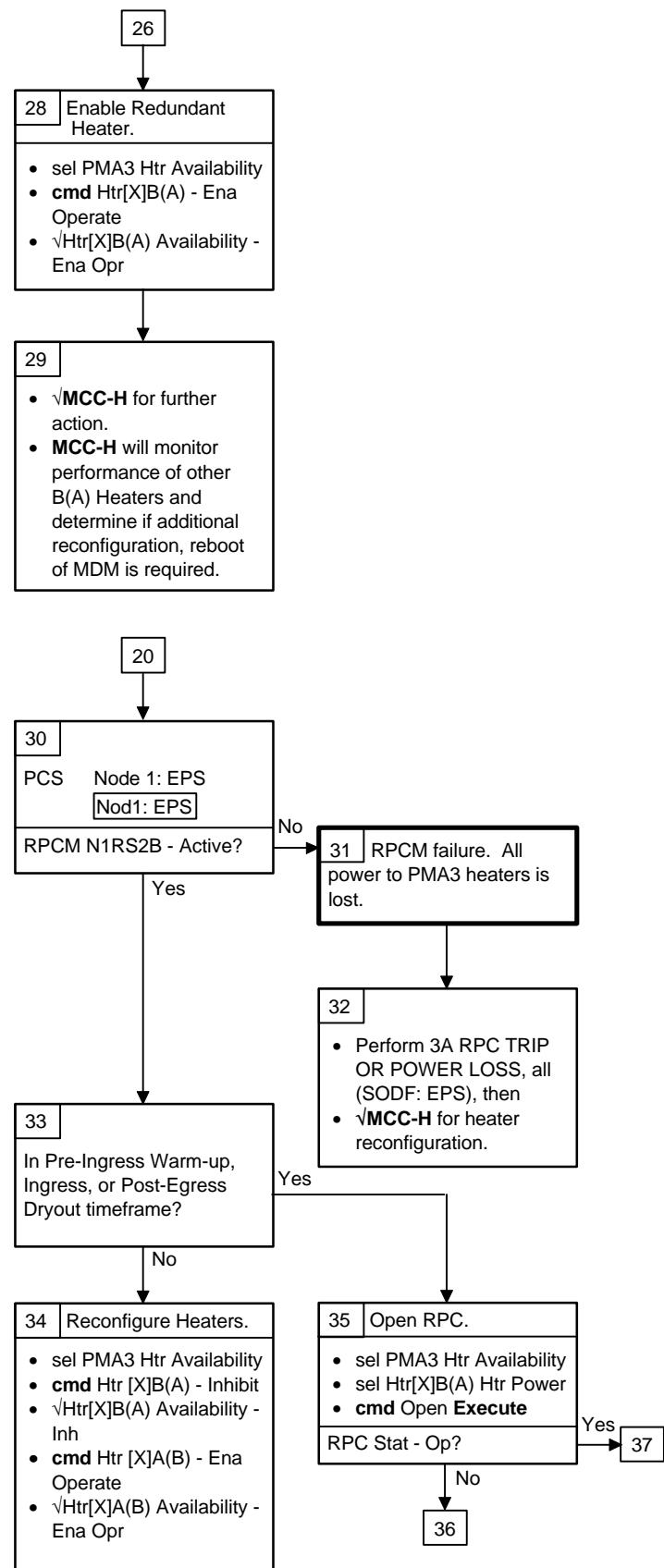
Temperature sensor has failed its range check. Temperature is either higher than +400°C or lower than -350°C. Software will command the heater off (default state).



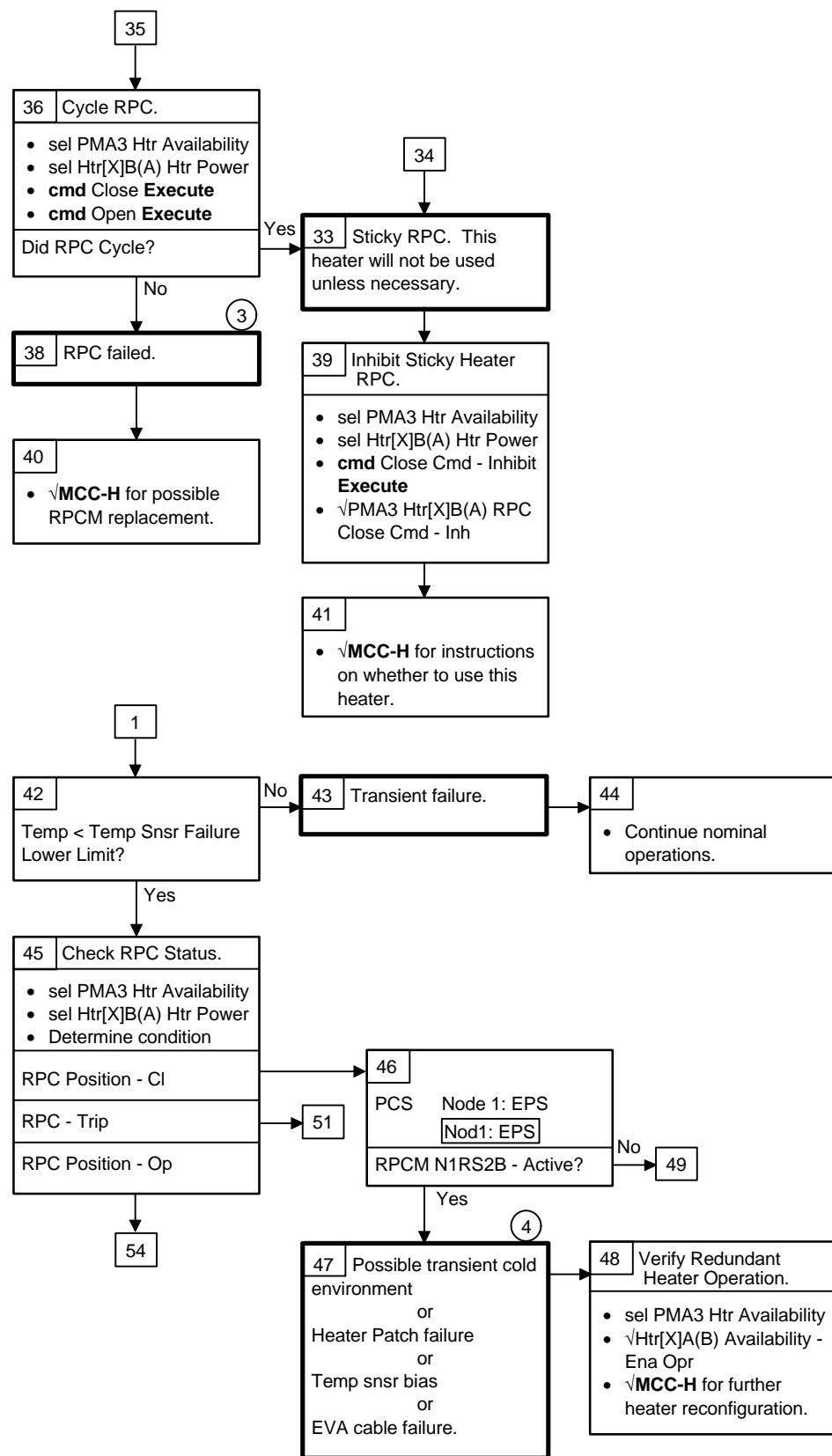
## PMA 3 SHELL HEATER FAILURE (Cont)



## PMA 3 SHELL HEATER FAILURE (Cont)



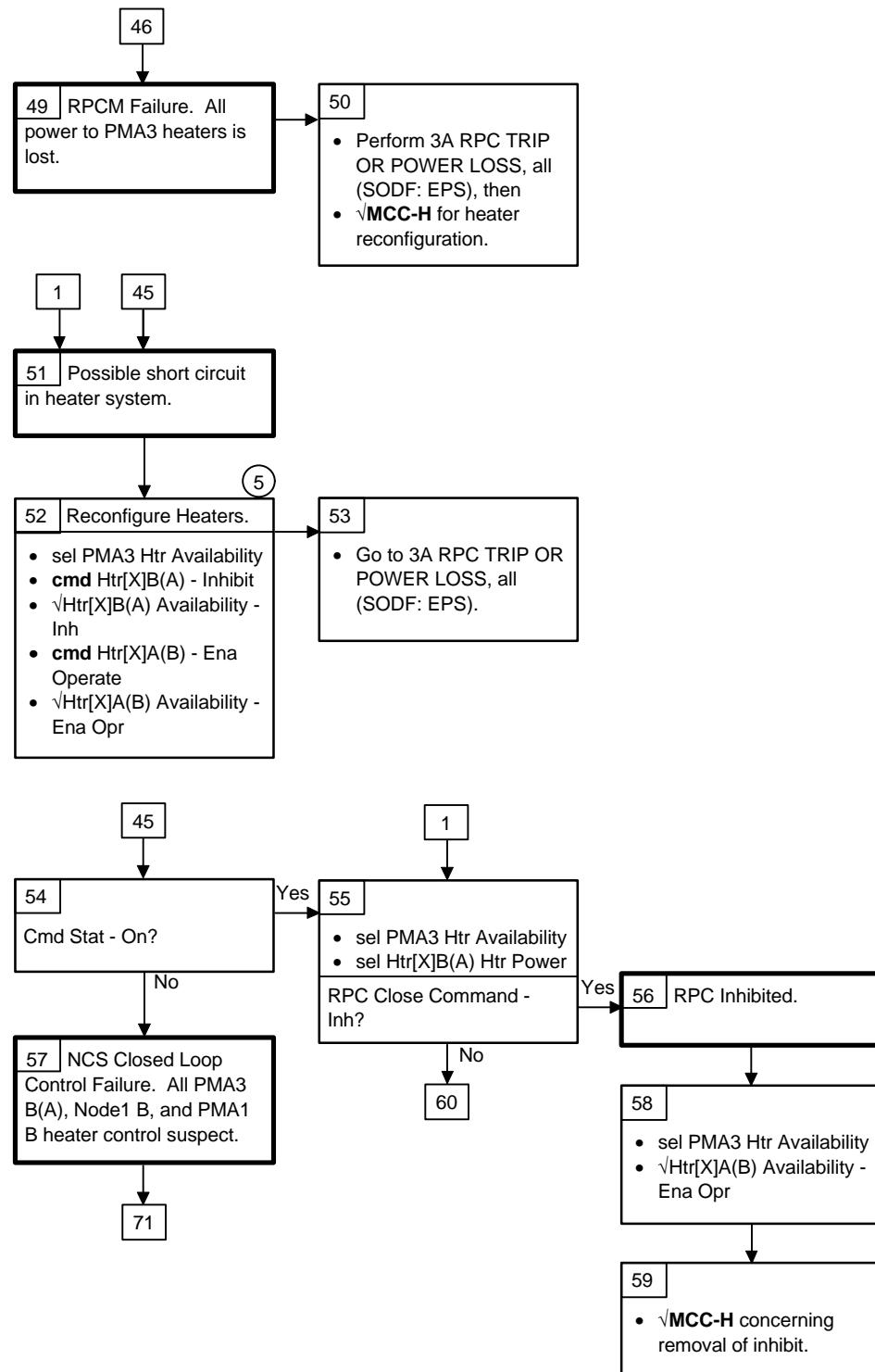
## PMA 3 SHELL HEATER FAILURE (Cont)



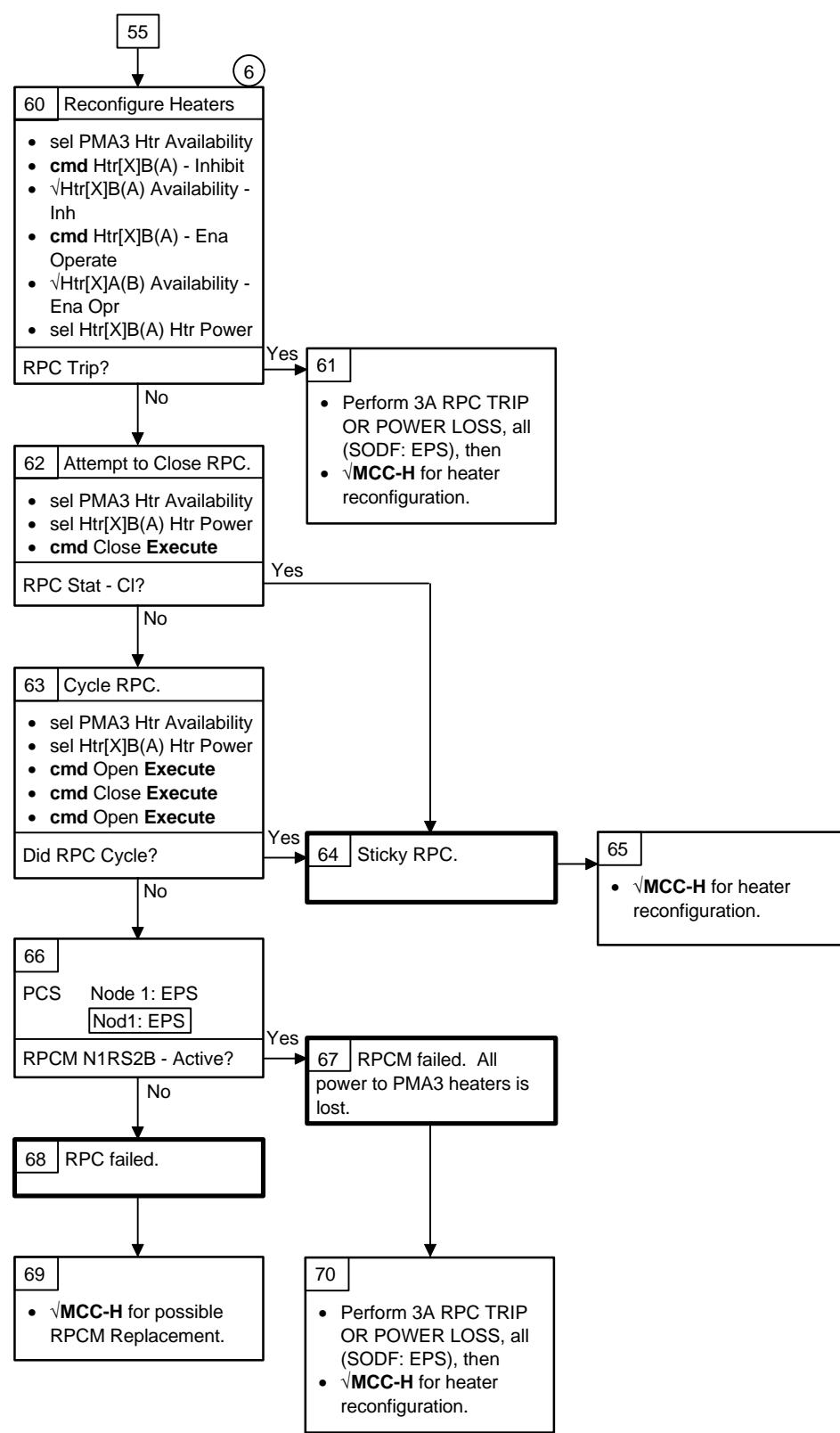
(3)  
MCC-H will evaluate the possibility of touch temperature violations and consequences of leaving the heater on.

(4)  
A transient cold environment could require both B and A heaters to keep temperatures within limits. A heater pad debonding failure could also be the culprit in this case. If all B(A) temperatures do not appear to be rising properly, the failure could be in the EVA cable/connectors P602/J602.

## PMA 3 SHELL HEATER FAILURE (Cont)



## PMA 3 SHELL HEATER FAILURE (Cont)

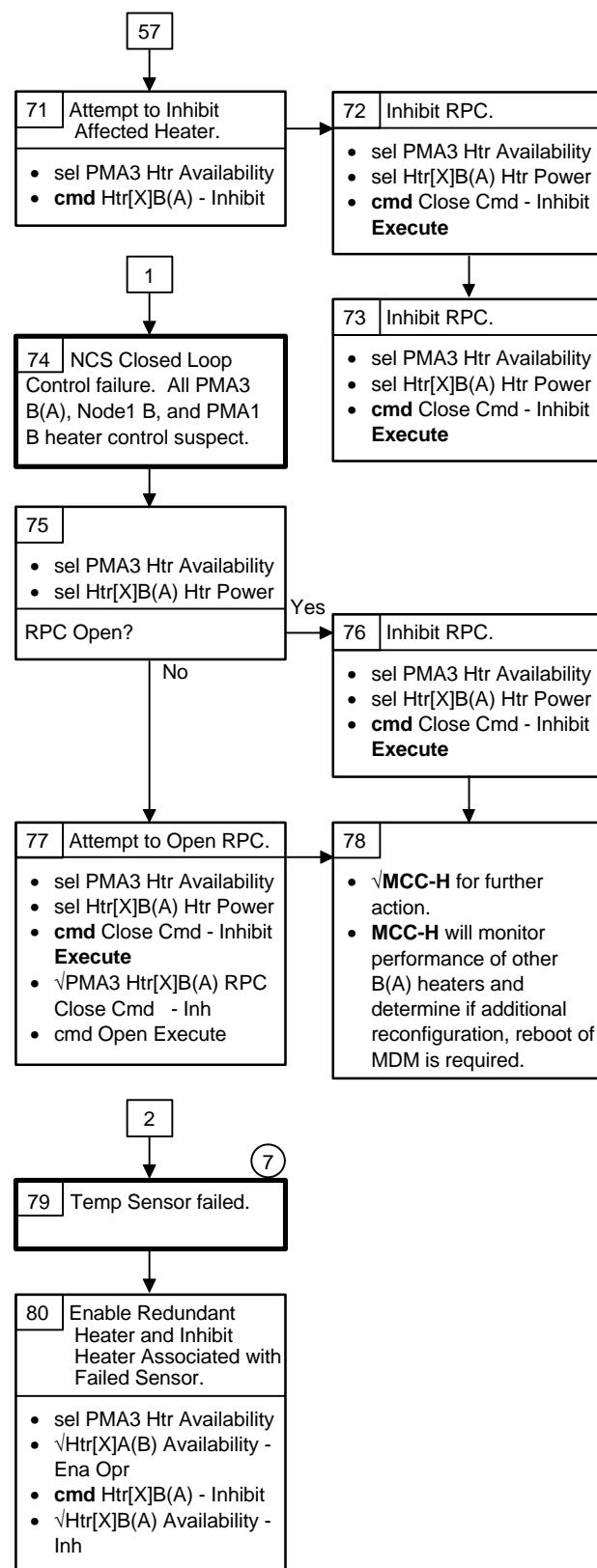


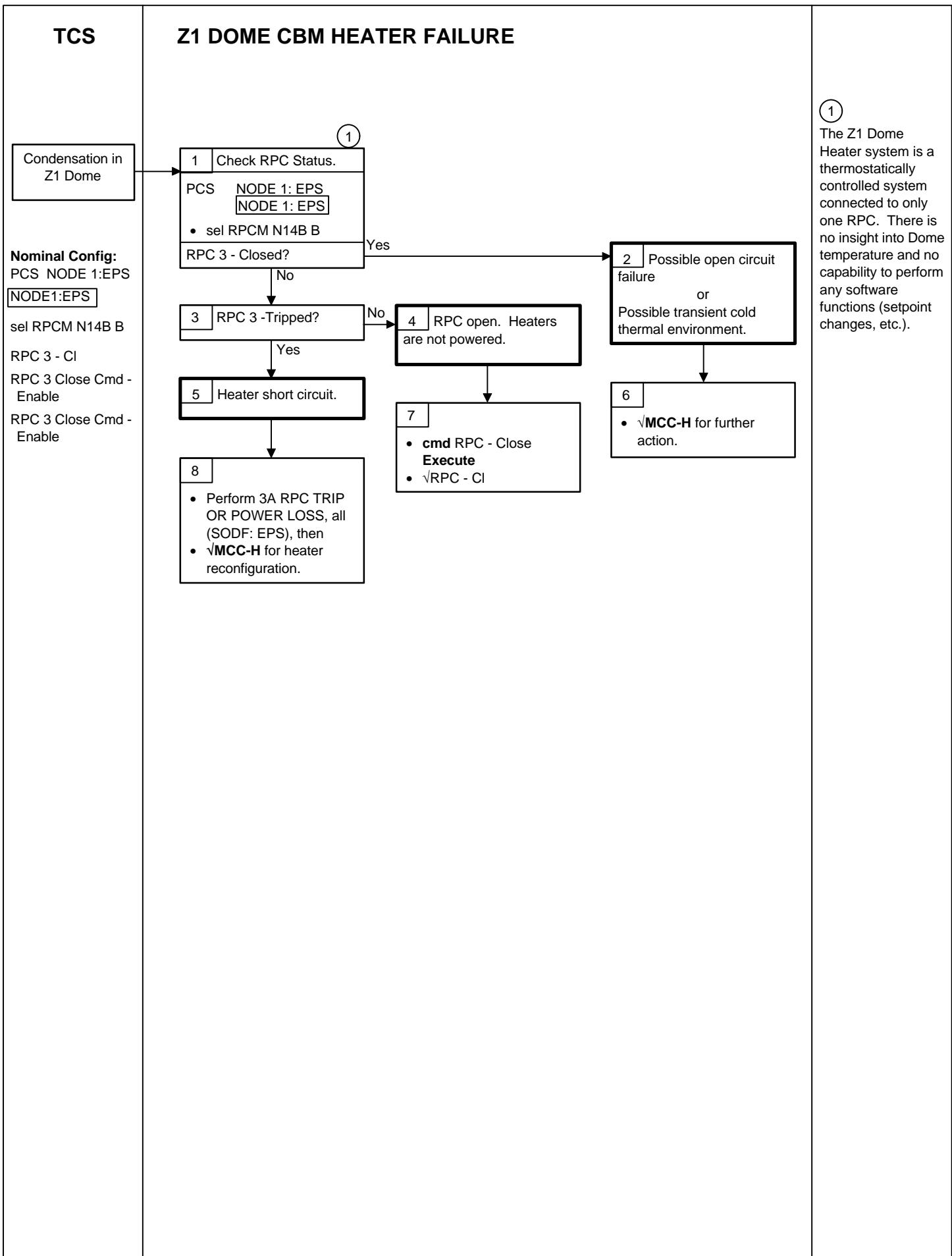
(6)

Since the shell is in a cold condition, the back-up heater should be enabled.

## PMA 3 SHELL HEATER FAILURE (Cont)

(7) Temperature sensor has failed its range check. Temperature is either higher than + 400°C or lower than - 350°C. Software will command the heater off (default state).





**QUICK RESPONSE PROCEDURES**

<b>ECLSS PROCEDURES.....</b>	<b>2-3</b>
FGB FIRE/SMOKE.....	2-5
NODE 1/PMA 2 FIRE/SMOKE .....	2-6
CONTINGENCY ISS EGRESS.....	2-7
EMERGENCY ISS EGRESS.....	2-8
ISS EXPEDITED EGRESS .....	2-9

**QUICK RESPONSE**

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## ECLSS PROCEDURES

FGB FIRE/SMOKE .....	2-5
NODE 1/PMA 2 FIRE/SMOKE.....	2-6
CONTINGENCY ISS EGRESS.....	2-7
EMERGENCY ISS EGRESS .....	2-8
ISS EXPEDITED EGRESS .....	2-9

ECLSS

**ECLSS**

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## FGB FIRE/SMOKE

### CDR/PLT ACTION

1. If FGB Hatches are closed

✓MCC-H >>

#### NOTE

FGB Fans and Electrical Equipment will perform auto shutdown 30 seconds after fire annunciation. Twenty (20) minutes later, fans and equipment will be restarted for 10 minutes (for fire sensor polling). Then this deact/react repeats again for two more times.

2. If fire reported by FGB crew:

nav NODE 1: ECLSS: FDIR  
Nod1 FDIR Details

sel Commands

**cmd Nod1 IMV Isol Execute**

✓N1\_1\_MDM Fire Isol Stat - Isol  
✓N1\_2\_MDM Fire Isol Stat - Isol

- M013Q 3. ARLK FAN A(B) → Off

- PCS 4. nav FGB: ECLSS  
FGB: ECLSS

✓Location of fire and report to FGB Module crew.  
✓FGB Nod1 PEV - CI

- MO1Q 5. On call "FGB Egress Complete."  
ARLK FAN A(B) → On

6. Perform orbiter/Node 1 cabin air monitoring per ECLS FRP-2 (FDF Malf, ECLS)
7. Perform FGB POST FIRE CABIN CLEANUP.

### FGB MODULE CREW ACTION

1. Don RS PBAs (2) and evacuate other crew.
2. If required,
3. ASK(pb) → push (stops siren)
4. ✓ CI (light off)
5. Remove power source (if possible).
6. Use RS PFE as required
7. Perform ISS EMERGENCY EGRESS.

### NODE 1 MODULE CREW ACTION

8. ✓ Node 1 Aft, Fwd Port, Stbd IMV vlv - Close

## NODE 1/PMA 2 FIRE/SMOKE

### CDR/PLT ACTION

MO13Q 1. ARLK FAN A(B) → Off

L12U 2. APCU 2 Converter → Off  
✓Converter tb - bp  
✓Output tb - bp  
✓APCU 2 Output - Off  
If crew in Node: Wait on call "ODS Hatch secure."

L12U 3. APCU 1 Converter → Off  
✓Converter tb - bp  
✓Output tb - bp  
APCU 1 Output → Off

4. **SM 210 NODE 1**

NCS LOAD SHED - ITEM 4 +9 EXEC

5. Perform POST-FIRE CABIN CLEANUP (OPCL).

MO13Q 6. ARLK FAN A(B) → On  
Verify if fire continues:  
NOD1 CABIN PRESS ↑  
If fire continues on **MCC** call:

7. Call Ext A/L "Prepare for Nod1 Depress."

A7L 8. √cb SYS PWR CNTL ESS 1BC(2CA) SYS 1(2) - CI  
9. √SYS PWR MN A(B) - On (tb-On)

10. cb DEP MN A(B) SYS 1(2) VENT ISOL → CI

11. cb DEP MN A(B) SYS 1(2) VENT → CI

12. VEST DEP VLV SYS 1(2) VENT ISOL → Op  
(tb-Op)

13. VEST DEP VLV SYS 1(2) VENT → Op (tb-Op)

**SM 167 DOCKING STATUS**  
**SM 066 ENVIRONMENT**

14. √AIRLOCK-VEST ΔP ≈ CABIN P (within 0.2 psid)  
VEST DEP VLV SYS 1(2) VENT → CI (tb-CI)  
VEST DEP VLV SYS 1(2) VENT ISOL → CI  
(tb-CI)  
cb DEP MN A(B) SYS 1(2) VENT → Op  
cb DEP MN A(B) SYS 1(2) VENT ISOL → Op

15. Perform NODE 1 POST-FIRE CABIN CLEANUP.

### MODULE CREW ACTION

1. Don QDMs and evacuate other crew.

2. Turn off Portable Ventilation.

3. Remove power source (if possible).

4. Use USOS PFE as required.

5. Perform ISS EMERGENCY EGRESS.

## CONTINGENCY ISS EGRESS

1. If FGB open:
  - Clear hatchway and close PA-ICC Hatch.
  - Clear hatchway and close PMA 1-PA Hatch with hatch tool.
  - Report "FGB Egress Complete."
2. If PMA 1 open:
  - Clear hatchway and close Nod1 Aft Hatch per decal.
  - ✓MPEV capped
  - Node 1 Aft Port, Stbd IMV vlv (two) → Close
  - Report "PMA 1 Egress Complete."
- Nod1  
Fwd  
Hatch  
3. If Node 1 open:
  - Clear hatchway and close Nod1 Fwd Hatch per decal.
  - ✓MPEV capped
  - NOD1 Fwd Port, Stbd IMV vlv (two) → Close
  - Report "Node 1 Egress Complete."
- MO13Q 4. ARLK FAN A(B) → Off
- Ext A/L 5. Disconnect station/shuttle Extension duct.  
Stow duct.
- ODS  
Vest  
If PMA 2 open
  - Close PMA 2 Hatch with hatch tool.
  - PMA 2 APAS Equal Vlv → Open
  - Report "ISS Egress Complete."

## **EMERGENCY ISS EGRESS**

1. If Progress open:

SM/Progress    2. Close Progress Hatch with hatch tool.  
Vest  
                  3. Remove cap from vestibule depressurization valve.  
                  4. Report "Progress Egress Complete."

5. If SM open:

SM TT        6. Close SM aft Hatch with hatch tool.

                  7. √SM aft PEV - ELECTRICAL CONTROL

SM WC        8. Deactivate lights from control panel #TBD.  
                  9. Report "SM Egress Complete."

10. If FGB open:

FGB PA        11. √FGB fwd PEV - ELECTRICAL CONTROL

PMA1        12. Close FGB fwd Hatch with hatch tool.  
                  13. Report "FGB Egress Complete."

14. If Node 1 open:

Node 1        15. Remove two PPRV caps.

16. If PMA 2 open:

ODS        17. Close PMA 2 APAS Hatch with APAS hatch tool.  
Vestibule  
                  18. PMA 2 APAS PEV → Close  
                  19. Report "Node 1, PMA 2 Egress Complete."

## ISS EXPEDITED EGRESS

1. If Progress open: Time to PMA 2 Hatch Closing TBD
- SM/Progress      2. Close Progress Hatch with hatch tool.
- Vest
3. Remove cap from vestibule depressurization valve.
4. Report "Progress Egress Complete."
5. If SM open: Time to PMA 2 Hatch Closing TBD
- FGB/SM      6. Close SM aft Hatch with hatch tool.
- Vest
- SM TT      7. √SM aft PEV - ELECTRICAL CONTROL
- SM WC      8. Deactivate lights from control panel #TBD.
- SM TC      9. √SM fwd PEV - ELECTRICAL CONTROL
- FGB/SM      10. Close SM fwd Hatch with hatch tool.
- Vest
11. Report "SM Egress Complete."
12. If FGB open: Time to PMA 2 Hatch Closing TBD
- FGB ICC      13. Close FGB aft Hatch with hatch tool.
14. √FGB aft PEV - ELECTRICAL CONTROL
- FGB PA      15. Close FGB ICC/PA Hatch with hatch tool.
16. √FGB fwd PEV - ELECTRICAL CONTROL
- PMA1/PA      17. Close FGB fwd Hatch with hatch tool.
18. Report "FGB Egress Complete."
19. If PMA 1 open: Time to PMA 2 Hatch Closing TBD
- PMA 1      20. Open grille cover on PMA 1 hard duct.
21. If Node 1 open: Time to PMA 2 Hatch Closing TBD
- Node 1      22. √Node 1 aft MPEV - Close
23. Node 1 Aft Port, Stbd IMV vlvs (two) → Open
24. Install desiccant shroud assemblies to portable fans and activate fans (four, three minimum).

25. Node 1 Fwd Port, Stbd IMV vlvs (two) → Close
26. Remove two (2) PPRV caps.
27. Egress Node 1
- PMA 2      28. Close Node Fwd Hatch per decal.
29. √Node 1 fwd MPEV - Close
30. Report “Node 1 Egress Complete.”
31. If PMA 2 open: Time to ISS Egress TBD
32. Disconnect PMA/Node extension duct from starboard IMV flange.  
Tmpty stow V-band clamp.
33. With combination ratchet and socket, install IMV cap to starboard  
IMV flange.  
Tighten V-band clamps 34 to 36 in-lbf (3.8 to 4.1 N-m).
34. Disconnect station/shuttle Extension ducting, stow in PMA2.
- ODS            35. Close PMA 2 APAS Hatch with APAS hatch tool.
- Vestibule      36. PMA 2 APAS PEV → Open
37. Report “PMA 2 Egress Complete.”

## CORRECTIVE PROCEDURES

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**CORRECTIVE**

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## C&T PROCEDURES

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S-BAND ORU HEATER ACTIVATION AT FLIGHT 3A .....	3-6

C&T

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C&T

## KU-BAND ORU HEATER ACTIVATION AT FLIGHT 3A

1. POWER ON KU-BAND TRANSMITTER/RECEIVER/CONTROLS  
HEATER

Z1: EPS: RPCM\_Z14B\_B: RPC\_06

[RPCM\_Z14B\_B\_RPC\_06]

'RPC Position'

**cmd** - Close

Verify Ku-Band TRC Heater RPC - Close

✓RPCM\_Z14B\_B\_RPC\_06 - CI

2. POWER ON KU-BAND ANTENNA HEATER

Z1: EPS: RPCM\_Z14B\_B: RPC\_05

[RPCM\_Z14B\_B\_RPC\_05]

'RPC Position'

**cmd** - Close

Verify Ku-Band Antenna Heater RPC - Close

✓RPCM\_Z14B\_B\_RPC\_05 - CI

## S-BAND ORU HEATER ACTIVATION AT FLIGHT 3A

- PCS      1. POWER ON S-BAND RF GROUP HEATER  
          Z1: EPS: RPCM\_N14B\_B: RPC\_01  
          RPCM\_N14B\_B\_RPC\_01  
          'RPC Position'
- cmd** - Close  
  
          Verify S-Band RFG Heater RPC - Close  
          √RPCM\_Z14B\_B\_RPC\_01 - CI
- PCS      2. POWER ON S-BAND BASEBAND SIGNAL PROCESSOR HEATER  
          Z1: EPS: RPCM\_N14B\_B: RPC\_04  
          RPCM\_N14B\_B\_RPC\_04  
          'RPC Position'
- cmd** - Close  
  
          Verify S-Band BSP Heater RPC - Close  
          √RPCM\_Z14B\_B\_RPC\_04 - CI

## ECLSS PROCEDURES

NODE 1 LEAK ISOLATION .....	3-9
FGB LEAK ISOLATION .....	TBD

ECLSS

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**ECLSS**

## NODE 1 LEAK ISOLATION

### NOTE

For steps 1 and 2, **MCC** will assist in determining when leak has been isolated using Node 1 module pressure decay.

**SPEC 66 ENVIRONMENT** or **SM SYS SUMM 1**

### CONFIGURE SHUTTLE FOR NODE 1 INGRESS

- ODS Hatch
1. EQUAL vlv (two) → EMER
  2. Attempt to open ODS hatch per decal.

- CM 1,2
3. Ingress External Airlock

- Inner Hatch
4. EQUAL vlv (two) → EMER
  5. Close Inner Hatch per decal.

### INGRESS ISOLATION STEPS

- APAS Hatch
6. If Pre-Ingress
    - PMA 2 Ingress
      1. APAS EQUAL VLV → Op
      2. Open APAS Hatch
        - Select 'ÐÀÁÍ ×ÅÅ' (WORKING) torque setting on hatch tool.
        - Insert tool in hatch socket and rotate 3 to 4 turns in direction of 'Í ØÉÐ' (OPEN) arrow until it clicks.
    - \* \*\*\*\*\*
    - \* If tool prematurely slips or does not engage \*
    - \* Select 'ÅÄÐÅÉÉÍ Í Å' (Emergency) \*
    - \* setting on Hatch tool. \*
    - \* Reattempt to rotate. \*
    - \* \*\*\*\*\*
  - Remove tool.
  - Attempt to open Hatch.
  - Secure Hatch in open position using fixing device.

Node 1 Fwd Hatch

    3. Open Node 1 Fwd hatch per decal
    4. Go to step 9.1.
    7. If Concurrent with Ingress
      - Node 1 PPRV Configuration
        1. Cap Node 1 Port PPRV
        2. Cap Node 1 Stbd PPRV

- ~
3. Report status to **MCC-H**.
  

Node 1 IMV Valves

    4. Port Fwd IMV Vlv (one) → Cl
    5. Stbd Fwd, Stbd Aft IMV Vlv (two) → Cl
    6. Deck Fwd, Deck Aft IMV Vlv (two) → Cl  

Node 1 NPRV Verification

    7. Remove closeout panel.
    8. ✓Stbd Fwd NPRV Cover - Cl
    9. Report status to **MCC-H**.
    10. Install closeout panel.
    11. Remove closeout panel.
    12. ✓Stbd Aft NPRV Cover - Cl
    13. Report status to **MCC-H**.
    14. Install closeout panel.
    15. Remove closeout panel.
    16. ✓Port Fwd NPRV Cover - Cl
    17. Report status to **MCC-H**.
    18. Install closeout panel.  
    8. If Post-Egress

Re-Ingress PMA 2

    1. APAS EQUAL VLV → Op
    2. Open APAS Hatch  
Select 'ĐÀAÍ ×ÅÅ' (WORKING) torque setting on hatch tool.  
Insert tool in hatch socket and rotate 3 to 4 turns in direction of 'Í ØÊĐ' (OPEN) arrow until it clicks.

\* \*\*\*\*\*

    - \* If tool prematurely slips or does not engage \*
    - \* Select 'ÀÀÐÅÉÉÍ Í Å' (Emergency) \*
    - \* setting on Hatch tool. \*
    - \* Reattempt to rotate. \*

\* \*\*\*\*\*

- Remove tool.  
Attempt to open Hatch.  
Secure Hatch in open position using fixing device.
3. If leak in Node 1 Forward Hatch or bulkhead
    - Reseat Node 1 Fwd Hatch  
MPEV → Open  
Open Hatch per decal.  
Close Hatch.  
✓Fwd Stbd, Fwd Port IMV cap secured (two)  
Report status to **MCC-H**.
  4. If no leak in Node 1 Forward Hatch or bulkhead, re-Ingress Node 1
    - Equalize Node 1  
Node 1 Fwd MPEV → Op  
Open Hatch per decal.  
Go to step 9.1.

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EPS PROCEDURES

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**EPS**

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**EPS SSR-1**
**POWER BUS LOSS: RPDA NIRS1** (Includes RPCMs N1RS1 A, B, C and Z14B A, B)

	ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
1	<p>PCS Node1: C&amp;DH: MDM_N1-2 <b>Primary NCS MDM</b> ✓State - Primary If no telemetry ✓MCC-H</p> <p>FGB: EPS <b>FGB: EPS</b></p> <p>If RACU 6 - On Perform RACU 6 DEACTIVATE, all (SODF: EPS)</p>	N1-1 MDM MDM N1-2 Srv Htr	<p><b>Caution Messages:</b> MDM N1-2 Detected RT Fail MDM N1-1 - PMA 1</p> <p><b>Advisory Messages:</b> RPCM N1RS1_A Loss of Comm - NOD1 RPCM N1RS1_B Loss of Comm - NOD1 RPCM N1RS1_C Loss of Comm - NOD1 RPCM Z14B_A Loss of Comm - Z1 RPCM Z14B_B Loss of Comm - Z1 MDM N1-2 Loss of Sync to MDM N1-1 - PMA 1</p> <p><b>Telemetry:</b> PCS FGB: EPS <b>FGB: EPS</b></p>	<p>① Both MDMs are nominally active. In the event of loss of the primary MDM, the alternate MDM will automatically transition to primary.</p>
2	<p>Z1: EPS <b>RPCM Z13B B</b></p> <p>sel RPC 15 <b>cmd Close Execute</b></p>	RPCM N1RS1 A (Type V) RPCM N1RS1 B (Type V) RPCM N1RS1 C (Type V) Control of RPCM N14B A Control of RPCM N14B B Control of RPCM N14B C RPCM Z14B A (Type VI) RPCM Z14B B (Type V)	<p>Node 1 Shell Htrs String A PMA 1 Shell Htrs String A SPDA Z13B Htr 1 SPDA Z14B Htr 2 CMG 2 Ext Htr CMG 3 Ext Htr PCU 1 Htr DDCU Z13B Htr 2 DDCU Z14B Htr 1 KU-Band SGTRC Htr KU-Band SGANT Htr S-Band BSP 2 Htr S-Band SASA 2 Htr EEATCS Non-op Htr B-1</p>	<p>② KU-Band, S-Band, EEATCS, CMG and PCU heaters are not redundant, possible loss of equipment. PCU is powered to provide some heat. String B of the Node 1 and PMA 1 shell heaters are nominally primary.</p>
3			<p>RACU Details RACU 6 Converter - Off RACU 6 Output Current &lt; 1 Amp RACU 6 Output Voltage ~0 Volts</p> <p><b>NODE1:EPS</b></p>	<p>③ The RACU indications will only be valid if the bus failure is due to a RACU failure.</p>
4	<p>Node 1: EPS: RPCM N1RS2</p> <p><b>RPCM NIRS2 A</b></p> <p>sel RPCM Detail sel RPC [X]</p> <p>[X] = <b>10 11</b> <b>cmd Open Execute</b></p> <p>Repeat</p>	CBM N1 Stbd Sec 1 (Early Comm Port Ant Pwr) 4 CBM N1 Stbd Sec 2 (Early Comm Port Ant Htr) 5 CBM N1 Stbd Sec 3 (Early Comm Stbd Ant Pwr) CBM N1 Stbd Sec 4 Early Comm Stbd Ant Htr	<p>RPCM N1RS1 A - not Active RPCM N1RS1 B - not Active RPCM N1RS1 C - not Active</p> <p><b>Z1: EPS</b></p> <p>RPCM Z14B A - not Active RPCM Z14B B - not Active</p>	<p>④ Since the Early Comm antennas are lost, the entire Early Comm system is lost. The internal Early Comm equipment is powered off, except for the Transceiver. The Transceiver remains powered to provide survival heater power.</p>
		5 CBM N1 Port Sec (1 --- 4)		<p>⑤ These CBMs are not planned to be operated on 3A.</p>
		Node1-1 SDO Card 1A: MDM N1-2 Opr Htr Node1 3-Way SDS Vlv-1 Solenoid Cmd Node1 3-Way SDS Vlv-1 Latch Cmd Node1 3-Way SDS Vlv-2 Solenoid Cmd		
		(Continued)		

**EPS SSR-1 (Cont)****POWER BUS LOSS: RPDA NIR\$1**(Includes RPCMs N1RS1 A, B, C and Z14B A, B)

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
	Node 1-1 SDO Card 1B CMG 1 CMG 4 PCU 2		

**EPS SSR-1a**  
**POWER BUS LOSS: RPCM NIRS1 A**

ACTION		EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
1	<p>PCS Node 1: C&amp;DH: MDM_N1-2</p> <div style="border: 1px solid black; padding: 2px;">Primary NCS MDM</div> <p>✓state - Primary If no telemetry ✓MCC-H</p> <p><b>On MCC Go:</b> Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).</p>	<p>N1-1 MDM</p> <p>RPCM N1RS1 A (Type V)</p> <p>Control of RPCM N14B A Control of RPCM N14B B Control of RPCM N14B C</p> <p>Node 1 Shell Htrs String A Node 1-1 SDO Card 1A</p> <p>MDM PMA1-2Htr Pwr Node1 3-Way SDS Vlv-1 Solenoid Cmd Node1 3-Way SDS Vlv-1 Latch Cmd Node1 3-Way SDS Vlv-2 Solenoid Cmd Node 1-1 SDO Card 1B</p>	<p><b>Caution Messages:</b> MDM N1-2 Detected RT Fail MDM N1-1 - PMA 1</p> <p><b>Advisory Messages:</b> RPCM N1RS1_A Loss of Comm - NOD1 MDM N1-2 Loss of Sync to MDM N1-1 - PMA 1</p> <p><b>Telemetry:</b> PCS Node 1: EPS</p> <div style="border: 1px solid black; padding: 2px;">NODE1:EPS</div> <p>RPCM N1RS1 A - not Active</p>	<p>(1) Both MDMs are nominally active. In the event of loss of the primary MDM, the alternate MDM will automatically transition to primary.</p> <p>(2) String B of the Node 1 and PMA 1 Shell Heaters are nominally primary.</p>
2				

**EPS SSR-1b**  
**POWER BUS LOSS: RPCM NIRS1 B**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<p><b>On MCC Go:</b>          Perform RPCM REMOVE AND REPLACE, all (SODF: OSO)</p>	<p>RPCM N1RS1 B (Type V)</p> <p>1 CBM N1 Port Sec (1 --- 4)</p>	<p><u>Caution Messages:</u>          RPCM N1RS1_B Loss of Comm - Nod1</p> <p><u>Advisory Messages:</u>          PCS Node 1: EPS  <b>NODE1:EPS</b></p> <p>RPCM N1RS1 B - not Active</p>	<p>① These CBMs are not planned to be used on 3A.</p>

**EPS SSR-1c**  
**POWER BUS LOSS: RPCM NIRS1 C**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<p>1</p> <p>PCS Node 1: EPS: RPCM N1RS2  <input type="button" value="RPCM NIRS2 A"/></p> <p>sel RPCM Detail      sel RPC [X]</p> <p>[X] = <input type="button" value="10"/> <input type="button" value="11"/></p> <p>cmd Open Execute</p> <p>Repeat</p> <p><b>On MCC Go:</b>      Go to RPCM REMOVE AND REPLACE, all (SODF: OSO).</p>	<p>RPCM N1RS1 C (Type V)      MDM N1 2 Srv Htr</p> <p>1 CBM N1 Stbd Sec 1 (Early Comm Port Ant Pwr)      CBM N1 Stbd Sec 2 (Early Comm Port Ant Htr)      CBM N1 Stbd Sec 3 (Early Comm Stbd Ant Pwr)      CBM N1 Stbd Sec 4 Early Comm Stbd Ant Htr)</p> <p>3 PMA1 Shell Htrs String A</p>	<p><u>Caution Messages:</u></p> <p><u>Advisory Messages:</u>      RPCM N1RS1_C Loss of Comm - NOD1</p> <p><u>Telemetry:</u>      PCS Node 1: EPS  <input type="button" value="NODE1:EPS"/>      RPCM N1RS1 C - not Active</p>	<p>(1) Since the Early Comm antennas are lost, the entire Early Comm system is lost. The internal Early Comm equipment is powered off, except for the Transceiver. The Transceiver remains powered to provide survival heater power.</p> <p>(2) These CBMs are not planned to be used on 3A.</p> <p>(3) String B of the Node 1 and PMA 1 Shell Heaters are nominally primary.</p>

## EPS SSR-2

### POWER BUS LOSS: RPDA NIRS2 (Includes RPCMs N1RS2 A, B, C and Z13B A, B)

	ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
1	<p>PCS Node 1: C&amp;DH: MDM_N1-1 <b>Primary NCS MDM</b></p> <p>✓State - Primary If no telemetry ✓MCC-H</p> <p>FGB EPS <b>FGB:EPS</b></p> <p>If RACU 5 - On Perform RACU 5 DEACTIVATE, all (SODF: EPS).</p> <p>If during Node 1 Pre-Ingress Warm-up, Ingress, or Post Egress Dryout ✓MCC-H for heater configuration</p> <p>Node 1: TCS <b>NODE1:TCS</b></p> <p>Node 1' sel Node 1 Htr [X] A [X] = <b>1 2 3 4 5</b> <b>6 7 8 9</b></p> <p><b>cmd Ena Opr</b> <b>Execute</b></p> <p>Repeat</p> <p>Node 1: TCS <b>NODE1:TCS</b></p> <p>'PMA 1'</p> <p>sel PMA1 [X] A [X] = <b>1 3 4 5 6</b></p> <p><b>cmd Ena Opr</b> <b>Execute</b></p> <p>Repeat</p> <p>Z1: EPS <b>RPCM Z13B B</b></p> <p>sel RPC 15 <b>cmd Close</b></p>	<p>N1-2 MDM MDM N1-1 Srv Htr</p> <p>RPCM N1RS2 A (Type V) RPCM N1RS2 B (Type V) RPCM N1RS2 C (Type V) Control of RPCM N13B A Control of RPCM N13B B Control of RPCM N13B C RPCM Z13B A (Type VI) RPCM Z13B B (Type V)</p> <p>Node1 Shell Htrs String B PMA1 Shell Htrs String B PMA 3 Shell Htrs Strings A,B SPDA Z14B Htr 1 SPDA Z13B Htr 2 CMG 1 Ext Htr CMG 4 Ext Htr PCU 2 Htr DDCU Z14B Htr 2 DDCU Z13B Htr 1 EEATCS Non-op Htr A-1</p>	<p><b>Caution Messages:</b> MDM N1-1 Detected RT Fail MDM N1-2 - PMA 1</p> <p><b>Advisory Messages:</b> RPCM N1RS2_A Loss of Comm - NOD1 RPCM N1RS2_B Loss of Comm - NOD1 RPCM N1RS2_C Loss of Comm - NOD1 RPCM Z13B_A Loss of Comm - Z1 RPCM Z13B_B Loss of Comm - Z1 MDM N1-1 Loss of Sync to MDM N1-2 - PMA 1</p> <p><b>Telemetry:</b> PCS FGB: EPS <b>FGB:EPS</b></p> <p>RACU Details</p> <p>RACU 5 Converter - Off RACU 5 Output Current &lt; 1 Amp RACU 5 Output Voltage ~0 volts <b>NODE 1: EPS</b></p> <p>RPCM N1RS2 A - not Active RPCM N1RS2 B - not Active RPCM N1RS2 C - not Active <b>Z1: EPS</b></p> <p>RPCM Z14B A - not Active RPCM Z14B B - not Active</p>	<p>① Both MDMs are nominally active. In the event of loss of the primary MDM, the alternate MDM will automatically transition to primary.</p> <p>② EEATCS, CMG and PCU heaters are not redundant, possible loss of equipment. PCU is powered to provide some heat. String B of the Node 1 and PMA 1 Shell Heaters are nominally primary. PMA 3 Heaters are required to prevent condensation. Does not impact 3A or jeopardize 4A/5A since PMA 3 goes to vacuum after shuttle departs.</p>
	(Continued)	(Continued)		

**EPS SSR-2 (Cont)**

**POWER BUS LOSS: RPDA NIR2**(Includes RPCMs N1RS2 A, B, C and Z13B A, B)

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<p>3 Node 1: EPS:RPCM N1RS1 [RPCM Z13B B]</p> <p>sel RPCM Detail sel RPC [X] [X] = 5 12 cmd Open Execute</p> <p>Repeat</p>	<p>3 CBM N1 Stbd Pri 1 (Early Comm Transceiver Pwr &amp; Htr)</p> <p>4 CBM N1 Stbd Pri 2 (Early Comm Spare)</p> <p>CBM N1 Stbd Pri 3 (Early Comm CTP)</p> <p>CBM N1 Stbd Pri 4 (Early Comm RFPDB)</p> <p>4 CBM N1 Port Pri (1 --- 4)</p> <p>Nod1-2 SDO Card 1A: MDM N1-1 Opr Htr</p> <p>N1-2 SDO Card 1B</p> <p>CMG 1 CMG 4</p> <p>PCU 2</p>		<p>(3) Since the internal Early Comm equipment is lost, the entire Early Comm system is lost. Power to the Port and Stbd antenna is removed.</p> <p>(4) These CBMs are not planned to be used on 3A.</p>

**EPS SSR-2a**  
**POWER BUS LOSS: RPCM NIR2 A**

	ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES												
1	<p>PCS Node 1: TCS  <input type="button" value="NODE1:TCS"/>  'NODE1'</p> <p>sel Node 1 Htr [X] A  [X] = <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr> <tr><td>6</td><td>7</td><td>8</td><td>9</td><td></td></tr> </table></p> <p><b>cmd Ena Opr Execute</b></p> <p>Repeat</p> <p>Node 1: EPS: RPCM N1RS1  <input type="button" value="RPCM NIR2 A C"/></p> <p>sel RPCM Detail  sel RPC [X],  [X] = <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>5</td><td>12</td></tr> </table></p> <p><b>cmd Open Execute</b></p> <p>Repeat</p> <p><b>On MCC Go:</b>  Go to RPCM REMOVE AND REPLACE, all (SODF: OSO).</p>	1	2	3	4	5	6	7	8	9		5	12	<p>RPCM N1RS2 A (Type V)</p> <p>Node1 Shell Htrs String B</p>	<p><b>Caution Messages:</b></p> <p>Advisory Messages:  RPCM N1RS2_A Loss of Comm - NOD1</p> <p>Telemetry:  PCS Node 1: EPS  <input type="button" value="Node1: EPS"/></p> <p>RPCM N1RS2 A - not Active</p>	<p>(1) String B of the Node 1 and PMA 1 Shell Heaters are nominally primary.</p> <p>(2) Since the internal Early Comm equipment is lost, the entire Early Comm system is lost. Power to the Port and Stbd antenna is removed.</p> <p>(3) These CBMs are not planned to be used on 3A.</p>
1	2	3	4	5												
6	7	8	9													
5	12															
2		CBM N1 Stbd Pri 1 (Early Comm Transceiver Pwr and Htr)														
3		CBM N1 Stbd Pri 2 (Early Comm Spare) CBM N1 Stbd Pri 3 (Early Comm CTP) CBM N1 Stbd Pri 4 (Early Comm RFPDB)														

**EPS SSR-2b**  
**POWER BUS LOSS: RPCM NIR2 B**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<b>On MCC Go:</b> Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).	RPCM N1RS2 B (Type V)	<u>Caution Messages:</u>  <u>Advisory Messages:</u> RPCM N1RS2_B Loss of Comm - NOD1  <u>Telemetry:</u> NODE1:EPS RPCM N1RS2 B - not Active	(1) PMA 3 heaters are required to prevent condensation. Does not impact 3A or jeopardize 4A/5A since PMA 3 goes to vacuum after Shuttle departs.
	1 PMA 3 Shell Htrs String A 1 PMA 3 Shell Htrs String B		

**EPS SSR-2c**  
**POWER BUS LOSS: RPCM NIRS2 C**

ACTION		EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
1	PCS Node1: C&DH: MDM_N1-1 <div style="border: 1px solid black; padding: 2px;">Primary NCS MDM</div> ✓State - Primary If no telemetry ✓MCC-H	N1-2 MDM MDM N1-1 Srv Htr	<u>Caution Messages:</u> MDM N1-1 Detected RT Fail MDM N1-2 - PMA 1  <u>Advisory Messages:</u> RPCM N1RS2_C Loss of Comm - NOD1 MDM N1-1 Loss of Sync to MDM N1-2 - PMA 1  <u>Telemetry:</u> PCS Node 1: EPS <div style="border: 1px solid black; padding: 2px;">NODE1: EPS</div> RPCM N1RS2 C - not Active	1 Both MDMs are nominally active. In the event of loss of the primary MDM, the alternate MDM will automatically transition to primary.  2 String B of the Node 1 and PMA 1 Shell Heaters are nominally primary.  3 These CBMs are not planned to be used on 3A.
2	If during Node 1 Pre-Ingress Warm-up, Ingress, or Post Egress Dryout ✓MCC-H for heat configuration  PCS Node 1:TCS <div style="border: 1px solid black; padding: 2px;">NODE1:TCS</div> 'PMA 1' sel PMA1 [X] A [X] = <div style="border: 1px solid black; padding: 2px; display: inline-block; width: 10px; height: 10px;"></div> <div style="border: 1px solid black; padding: 2px; display: inline-block; width: 10px; height: 10px;"></div> <div style="border: 1px solid black; padding: 2px; display: inline-block; width: 10px; height: 10px;"></div> <div style="border: 1px solid black; padding: 2px; display: inline-block; width: 10px; height: 10px;"></div> <div style="border: 1px solid black; padding: 2px; display: inline-block; width: 10px; height: 10px;"></div> <div style="border: 1px solid black; padding: 2px; display: inline-block; width: 10px; height: 10px;"></div> cmd Ena Opr Execute   Repeat	PMA 1 Heater string B		
		3 CBM N1 Port Pri (1 ---4 ) Node1-2 SDO Card 1A: MDM N1-1 Opr Htr N1-2 SDO Card 1B CMG 1 CMG 4 PCU 2		

**EPS SSR-3**  
**POWER BUS LOSS: RPDA N13B**

	ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
	CRT  SM 200 APCU Status  ✓APCU 1 OUT VOLTS RES LOW = 0 If not, perform APCU DEACT, all (SODF: EPS).	RPCM N13B A (Type V) RPCM N13B B (Type V) RPCM N13B C (Type V)	Caution Messages: Smoke Detector 2 Fail - NOD1  Advisory Messages: RPCM N13B A Loss Of Comm - NOD1 RPCM N13B B Loss Of Comm - NOD1 RPCM N13B C Loss Of Comm - NOD1  Telemetry: CRT SM 200 APCU Status	(1) Normally the CBMs are powered off. Z1 truss and PMA 3 are attached during 3A using RPCMs N13B and N14B. If RPDA is lost before CBM operations have started, mating will not occur until redundant power sources are provided. If RPDA is lost during CBM operations, mating will continue with N14B.
1	If CBM controllers are powered by secondary RPCs, continue CBM operations; otherwise, perform CBM MATE MALFUNCTION, all (SODF: OSO).	CBM N1 Nad Pri (1 --- 4) CBM N1 Zen Pri (1 --- 4) CBM N1 Fwd Pri (1 --- 4)		(2) For IMV valves, use manual override.
2		IMV Stbd Aft Fan IMV Deck Aft Vlv IMV Deck Fwd Vlv IMV Fwd Stbd Vlv IMV Fwd Port Vlv IMV Port Fwd Fan  LT Int NOD1OS4 LT Int NOD1OS2-1 LT Int NOD1PD2 LT Int NOD1OS2 Smoke Detector 2	3 APCU 1 CONV A OUT AMPS ~0 APCU 1 CONV B Out AMPS ~0 APCU 1 OUT VOLTS RES LOW = 0  PCS Node 1: EPS NODE1:EP  RPCM N13B A - not Active RPCM N13B B - not Active RPCM N13B C - not Active	(3) The APCU indications will only be valid if the bus failure is due to an APCU failure.

**EPS SSR-3a**  
**POWER BUS LOSS: RPCM N13B A**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<b>On MCC Go:</b> Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).	RPCM N13B A (Type V)	<u>Caution Messages:</u> Smoke Detector 2 Fail - NOD1	
	IMV Stbd Aft Fan	<u>Advisory Messages:</u> RPCM N13B A Loss Of Comm - NOD1	
	LT Int NOD1OS4 LT Int NOD1OS2-1		
	Smoke Detector 2	<u>Telemetry:</u> PCS Node 1: EPS Node1: EPS	
		RPCM N13B A - not Active	

**EPS SSR-3b**  
**POWER BUS LOSS: RPCM N13B B**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
	RPCM N13B B (Type V)  IMV Deck Aft Vlv IMV Deck Fwd Vlv	<u>Caution Messages:</u>  <u>Advisory Messages:</u> RPCM N13B B Loss Of Comm - NOD1	(1) For IMV valves, use manual override.
If CBM controllers are powered by secondary RPCs, continue CBM operations; otherwise, perform CBM MATE MALFUNCTION, all (SODF: OSO)  <b>On MCC Go:</b> Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).	CBM N1 Nad Pri (1 --- 4) CBM N1 Zen Pri (1 --- 4)  LT Int NOD1PD2 EmerLtPSN13B4B B	<u>Telemetry:</u> PCS Node 1: EPS Node1: EPS  RPCM N13B B - not Active	(2) Normally the CBMs are powered off. Z1 truss and PMA 3 are attached during 3A using RPCMs N13B and N14B. If RPDA is lost before CBM operations have started, mating will not occur until redundant power sources are provided. If RPDA is lost during CBM operations, mating will continue with N14B.

**EPS SSR-3c**  
**POWER BUS LOSS: RPCM N13B C**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<b>On MCC Go:</b> Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).	RPCM N13B C (Type V)	<u>Caution Messages:</u>  <u>Advisory Messages:</u> RPCM N13B C Loss Of Comm - NOD1	(1) For IMV valves, use manual override.
	1 IMV Fwd Stbd Vlv 1 IMV Fwd Port Vlv IMV Port Fwd Fan  2 CBM N1 Fwd Pri (1 --- 4)  LT Int NOD1OS2	<u>Telemetry:</u> PCS Node 1: EPS <div style="border: 1px solid black; padding: 2px;">NODE1:EPS</div> RPCM N13B C - not Active	(2) These CBMs are not planned to be used on 3A.

**EPS SSR-4**  
**POWER BUS LOSS: RPDA N14B**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
CRT  SM 200 APCU Status  ✓APCU 2 OUT VOLTS RES LOW = 0 If not, perform APCU DEACT, all (SODF: EPS).	RPCM N14B A (Type V) RPCM N14B B (Type V) RPCM N14B C (Type V)	<u>Caution Messages:</u> SmoKe Detector 1 Fail - NOD1  <u>Advisory Messages:</u> RPCM N14B A Loss Of Comm - NOD1 RPCM N14B B Loss Of Comm - NOD1 RPCM N14B C Loss Of Comm - NOD1  <u>Telemetry:</u> CRT  SM 200 APCU Status	(1) For IMV valves, use manual override.
If crewmembers in Node 1 or FGB, turn on portable fans installed in Node 1.	1 Cabin Fan IMV Stbd Fwd Vlv IMV Aft Stbd Vlv IMV Aft Port Vlv IMV Aft Port Fan IMV Stbd Aft Vlv IMV Port Fwd Vlv		(2) Normally the CBMs are powered off. Z1 truss and PMA 3 are attached during 3A using RPCMs N13B and N14B. If RPDA is lost before CBM operations have started, mating will not occur until redundant power sources are provided. If RPDA is lost during CBM operations, mating will continue with N13B which has the primary controllers.
If CBM controllers were powered by secondary RPCs, perform CBM MATE MALFUNCTION, all (SODF: OSO); otherwise, continue CBM operations.	2 CBM N1 Nad Sec (1 --- 4) CBM N1 Zen Sec (1 --- 4) CBM N1 Fwd Sec (1 --- 4)  LT Int NOD1SD2 LT Int NOD1OP4 LT Int NOD1OP2-1 LT Int NOD1OP2-2  Smoke Detector 1	3 APCU 2 CONV A OUT AMPS ~0 APCU 2 CONV B Out AMPS ~0 APCU 2 OUT VOLTS RES LOW = 0  PCS Node1: EPS Node1: EPS  RPCM N14B A - not Active RPCM N14B B - not Active RPCM N14B C - not Active	(3) The APCU indications will only be valid if the bus failure is due to an APCU failure.

**EPS SSR-4a**  
**POWER BUS LOSS: RPCM N14B A**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<b>On MCC Go:</b> Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).	RPCM N14B A (Type V)	Cation Messages:  Advisory Messages: RPCM N14B A Loss Of Comm - NOD1  Telemetry: <div style="border: 1px solid black; padding: 2px;">NODE1:EPS</div> RPCM N14B A - not Active	(1) These CBMs are not planned to be used on 3A.  (2) For IMV valves, use manual override.
	1 CBM N1 Fwd Sec (1 --- 4)  2 IMV Stbd Fwd Vlv		

**EPS SSR-4b**  
**POWER BUS LOSS: RPCM N14B B**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
	RPCM N14B B (Type V)		
If crewmembers in Node 1 or FGB, turn on portable fans installed in Node 1.	Cabin Fan		
If CBM controllers were powered by secondary RPCs, perform CBM MATE MALFUNCTION, all (SODF: OSO); otherwise, continue CBM operations.			
<b>On MCC Go:</b> Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).	1 CBM N1 Nad Sec (1 --- 4) CBM N1 Zen Sec (1 --- 4)  LT Int NOD1SD2  RAMV	Caution Messages:  Advisory Messages: RPCM N14B B Loss Of Comm - NOD1  Telemetry: PCS Node1: EPS Node1: EPS  RPCM N14B B - not Active	(1) Normally the CBMs are powered off. Z1 truss and PMA3 are attached during 3A using RPCMs N13B and N14B. If RPDA is lost before CBM operations have started, mating will not occur until redundant power sources are provided. If RPDA is lost during CBM operations, mating will continue with N13B which has the primary controllers.

**EPS SSR-4c**  
**POWER BUS LOSS: RPCM N14B C**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<b>On MCC Go:</b> Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).	RPCM N14B C (Type V)	<b>Caution Messages:</b> Smoke Detector 1 Fail - NOD1  <b>Advisory Messages:</b> RPCM N14B C Loss Of Comm - NOD1  <b>Telemetry:</b> PCS Node1: EPS Node1: EPS RPCM N14B C - not Active	(1) For IMV valves, use manual override.
	1 IMV Aft Stbd Vlv IMV Aft Port Vlv IMV Aft Port Fan IMV Stbd Aft Vlv IMV Port Fwd Vlv  LT Int NOD1OP4 LT Int NOD1OP2-1 LT Int NOD1OP2-2  Smoke Detector 1		

**EPS SSR-5**

**POWER BUS LOSS: RPDA Z13B**(Includes RPCMs Z13B A and B)

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<p>Power On PCU PCS Z1: EPS <b>RPCM Z14B B</b></p> <p>sel RPC 15 <b>cmd Close</b></p>	<p>1</p> <p>RPCM Z13B A (Type VI) RPCM Z13B B (Type V)</p> <p>SPDA Z13B Htr SPDA Z14B Htr CMG 1 Ext Htr CMG 4 Ext Htr PCU 2 Htr DDCU Z13B Htr DDCU Z14B Htr EEATCS Non-op Htr A-1</p> <p>CMG 2 CMG 3</p> <p>PCU 1</p> <p>S-Band SASA S-Band XPDR S-Band BSP KU-Band SGTRC KU-Band SGANT</p>	<p><u>Caution Messages:</u></p> <p><u>Advisory Messages:</u> RPCM Z13B_A Loss of Comm - Z1 RPCM Z13B_B Loss of Comm - Z1</p> <p><u>Telemetry:</u></p> <p>PCS Z1: EPS <b>Z1:EPS</b></p> <p>RPCM Z13B A - not Active RPCM Z13B B - not Active</p>	<p>① EEATCS, CMG, and PCU heaters are not redundant, possible loss of equipment. PCU is powered to provide some heat.</p>

**EPS SSR-5a**  
**POWER BUS LOSS: RPCM Z13B A**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<p><b>On MCC Go:</b> Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).</p>	RPCM Z13B A (Type VI)	<p><u>Caution Messages:</u></p> <p><u>Advisory Messages:</u> RPCM Z13B_A Loss Of Comm -Z1</p> <p><u>Telemetry:</u></p> <p>PCS Z1: EPS Z1:EPS</p> <p>RPCM Z13B A - not Active</p>	

**EPS SSR-5b**  
**POWER BUS LOSS: RPCM Z13B B**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
	RPCM Z13B B (Type V)	<u>Caution Messages:</u>	
Power On PCU PCS Z1: EPS <b>RPCM Z14B B</b>  sel RPC 15 <b>cmd Close</b> ✓Position - CI	SPDA Z13B Htr SPDA Z14B Htr CMG 1 Ext Htr CMG 4 Ext Htr PCU 2 Htr DDCU Z13B Htr DDCU Z14B Htr EEATCS Non-op Htr A-1	<u>Advisory Messages:</u> RPCM Z13B_B Loss of Comm - Z1  <u>Telemetry:</u> PCS Z1: EPS <b>Z1:EPS</b>  RPCM Z13B B - not Active	① EEATCS, CMG, and PCU heaters are not redundant; possible loss of equipment. PCU is powered to provide some heat.
<b>On MCC Go:</b> Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).	CMG 2 CMG 3		
	PCU 1		
	S-Band SASA S-Band XPDR S-Band BSP KU-Band SGTRC KU-Band SGANT		

## EPS SSR-6

## POWER BUS LOSS: RPDA Z14B (Includes RPCMs Z14B A and B)

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<p>Power On PCU PCS Z1: EPS <b>RPCM Z13B B</b></p> <p>sel RPC 15 <b>cmd Close</b> ✓Position - CI</p>	<p>RPCM Z14B A (Type VI) RPCM Z14B B (Type V)</p> <p>SPDA Z13B Htr SPDA Z14B Htr CMG 2 Ext Htr CMG 3 Ext Htr PCU 1 Htr DDCU Z13B Htr 2 DDCU Z14B Htr 1 KU-Band SGTRC Htr KU-Band SGANT Htr S-Band BSP 2 Htr S-Band SASA 2 Htr EEATCS Non-Op Htr B-1</p> <p>CMG 1 CMG 4</p> <p>PCU 2</p>	<p><u>Caution Messages:</u></p> <p><u>Advisory Messages:</u> RPCM Z14B_A Loss of Comm - Z1 RPCM Z14B_B Loss of Comm - Z1</p> <p><u>Telemetry:</u> PCS Z1: EPS <b>Z1: EPS</b></p> <p>RPCM Z14B A - not Active RPCM Z14B B - not Active</p>	<p>① KU-Band, S-Band, EEATCS, CMG, and PCU heaters are not redundant, possible loss of equipment. PCU is powered to provide some heat.</p>

**EPS SSR-6a**  
**POWER BUS LOSS: RPCM Z14B A**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
On MCC Go: Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).	RPCM Z14B A (Type VI)	<p>Caution Messages:</p> <p>Advisory Messages:</p> <p>RPCM Z14B_A Loss of Comm - Z1</p> <p>Telemetry:</p> <p>PCS    Z1: EPS</p> <p style="border: 1px solid black; padding: 2px;">Z1: EPS</p> <p>RPCM Z14B A - not Active</p>	

**EPS SSR-6b**  
**POWER BUS LOSS: RPCM Z14B B**

ACTION	EQUIP/FUNCTION LOST	CREW INDICATION	NOTES
<p>PCS Z1: EPS</p> <div style="border: 1px solid black; padding: 2px;">RPCM Z13B B</div> <p>sel RPC 15</p> <p><b>cmd</b> Close ✓Position - CI</p>	<p>RPCM Z14B B (Type V)</p> <p>SPDA Z13B Htr</p> <p>SPDA Z14B Htr</p> <p>CMG 2 Ext Htr</p> <p>CMG 3 Ext Htr</p> <p>PCU 1 Htr</p> <p>DDCU Z13B Htr 2</p> <p>DDCU Z14B Htr 1</p> <p>KU-Band SGTRC Htr</p> <p>KU-Band SGANT Htr</p> <p>S-Band BSP 2 Htr</p> <p>S-Band SASA 2 Htr</p> <p>EEATCS Non-Op Htr B-1</p>	<p><u>Caution Messages:</u></p> <p>Advisory Messages: RPCM Z14B_B Loss of Comm - Z1</p> <p><u>Telemetry:</u></p> <p>PCS Z1:EPS</p> <div style="border: 1px solid black; padding: 2px;">Z1: EPS</div> <p>RPCM Z14B B - not Active</p>	<p>① KU-Band, S-Band, EEATCS, CMG, and PCU heaters are not redundant, possible loss of equipment. PCU is powered to provide some heat.</p>
<p><b>On MCC Go:</b> Perform RPCM REMOVE AND REPLACE, all (SODF: OSO).</p>	<p>CMG 1</p> <p>CMG 4</p> <p>PCU 2</p>		

L&M PROCEDURES

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**L&M**

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## **CBM CAPTURE LATCH ASSEMBLY R&R GENERIC**

### OBJECTIVE:

This procedure removes and replaces a failed CBM Capture Latch Assembly.

### LOCATION:

Installed: Active CBM Docking Ring  
Stowed: \Maintenance Database

### DURATION:

30 minutes

### PARTS:

CBM Capture Latch Assembly (P/N 683-13621-2)

### MATERIALS:

None

### TOOLS REQUIRED:

Equipment Bag

Tether

Scopemeter

Kit E:

Ratchet 3/8" Drive

Ratchet 1/4" Drive

Kit D:

3/16" Hex Head, 3/8" Drive

6", 3/16" Ball Tip Hex Head Driver, 1/4" Drive\*

Kit C:

Kit F:

7/16" Socket, 1/4" Drive

3/8" Socket, 3/8" Drive

Kit G:

(30-200 in-lbs) Trq Wrench, 3/8" Drive

### REFERENCED PROCEDURE(S):

CBM ACTIVATION AND CAPTURE LATCH CHECKOUT

### SAFE

#### **WARNING**

Failure to remove power can result in electrical shock hazard.

1. \CBM Controller Pwr - OFF

## ACCESS

2. If required, remove vestibule closeout for access by unfastening 1/4 turn fasteners.  
Tmpty stow.
3. If required, remove ACBM Alignment Guides for access by loosening fasteners (five per Alignment Guide) (Ratchet 3/8" Drive, 3/8" Socket).  
Tmpty stow.
4. If capture latch assembly cannot be accessed because of an adjacent powered bolt assembly, go to CBM POWERED BOLT R&R GENERIC procedure, perform REMOVE steps and return to step 5 of this procedure.

## REMOVE

5. Demate power connector (P2) from Capture Latch Actuator Assembly (J1).
6. Disconnect Capture Latch Actuator ground wire from ACBM ring (Ratchet 1/4" Drive, 7/16" Socket).

### NOTE

If capture latch is not in latched position, access to two (of four) captive fasteners holding capture latch assembly to ACBM ring may require additional access steps. See step TBD.

7. Loosen fasteners (four) (Ratchet 1/4" Drive, 6", 3/16" Ball Tip Hex Head Driver).
8. Grasp Capture Latch Assembly by middle of capture arm, lift up until assembly clears edge of capture fitting.
9. Tilt Capture Latch Assembly towards passive ring, lift assembly up and through cutout in ACBM ring.  
Label, tmpty stow.
10. Demate switch connector P3 from Capture Latch Assembly.

## REPLACE

11. Mate switch connector P3 to switch receptacle on replacement Capture Latch Assembly.
12. Install replacement Capture Latch Assembly by grasping middle portion of capture arm and lowering actuator end down through cutout in ACBM ring.

13. Tighten fasteners (four), torque to  $95 \pm 5$  in-lbs (Ratchet 3/8" Drive, 3/16" Hex Head, (30-200 in-lb) Trq Wrench).
14. Connect Capture Latch Actuator ground wire to ACBM ring (Ratchet 1/4" Drive, 7/16" Socket).
15. Mate power connector (P2) to capture latch actuator power receptacle (J1).

CHECK-OUT

16. Check for continuity between casing of Capture Latch Actuator casing and ACBM ring structure (Scopemeter).
17. Perform CBM ACTIVATION AND CAPTURE LATCH CHECKOUT procedure.  
Include steps to index rotational position of capture latch actuator to known rotational position of capture latch.

CLOSE-OUT

18. If powered bolt assembly was removed, go to CBM POWERED BOLT R&R GENERIC procedure, perform REPLACE and CLOSE-OUT steps.

NOTE

Four pins on alignment guide mate with four alignment pin holes on ACBM ring.

19. If ACBM alignment guides were removed, replace alignment guides, tighten fasteners (five) 1/4 turn past snug (Ratchet 3/8" Drive, 3/8" Socket).
20. If vestibule closeout was removed, install vestibule closeout, tighten 1/4 turn fasteners (TBD number).

POST MAINTENANCE

21. Stow failed Capture Latch Assembly, tools, equipment.
22. Update Maintenance Database.

## **CBM CONTROLLER ASSY R&R NODE 1**

### OBJECTIVE:

This procedure removes and replaces a failed Node 1 CBM Controller Assembly.

### LOCATION:

Installed: Active CBM Docking Ring  
Stowed: \Maintenance Database

### DURATION:

26 minutes

### PARTS:

CBM Controller Assembly (P/N 2355260-1)

### MATERIALS:

None

### TOOLS REQUIRED:

Equipment Bag

Tether

Scopemeter

Kit E:

Ratchet 3/8" Drive  
4" Ext 3/8" Drive

Kit C:

7/16" Socket, 3/8" Drive

Kit D:

5/32" Hex Head, 3/8" Drive

Kit G:

(30-200 in-lbs)Trq Wrench, 3/8" Drive  
IVA Tool Box, Lid #1  
Static Wrist Tether

### REFERENCED PROCEDURE(S):

CBM CONTROLLER ACTIVATION AND CHECKOUT

SAFE

**WARNING**

Failure to remove power can result in electrical shock hazard.

Table 1. Node 1 CBM Controller Power Distribution

Cntr Assy	Pri Pwr RPC	Sec Pwr RPC
FORWARD	-----	-----
Cntr Asy 1	RPCM_N13B_C_RPC_03	RPCM_N14B_A_RPC_02
Cntr Asy 2	RPCM_N13B_C_RPC_04	RPCM_N14B_A_RPC_03
Cntr Asy 3	RPCM_N13B_C_RPC_05	RPCM_N14B_A_RPC_14
Cntr Asy 4	RPCM_N13B_C_RPC_06	RPCM_N14B_A_RPC_15
ZENITH	-----	-----
Cntr Asy 1	RPCM_N13B_B_RPC_11	RPCM_N14B_B_RPC_03
Cntr Asy 2	RPCM_N13B_B_RPC_12	RPCM_N14B_B_RPC_04
Cntr Asy 3	RPCM_N13B_B_RPC_13	RPCM_N14B_B_RPC_05
Cntr Asy 4	RPCM_N13B_B_RPC_14	RPCM_N14B_B_RPC_06
NADIR	-----	-----
Cntr Asy 1	RPCM_N13B_B_RPC_03	RPCM_N14B_B_RPC_11
Cntr Asy 2	RPCM_N13B_B_RPC_04	RPCM_N14B_B_RPC_12
Cntr Asy 3	RPCM_N13B_B_RPC_05	RPCM_N14B_B_RPC_13
Cntr Asy 4	RPCM_N13B_B_RPC_06	RPCM_N14B_B_RPC_14
PORt	-----	-----
Cntr Asy 1	RPCM_N1RS2_C_RPC_07	RPCM_N1RS1_B_RPC_05
Cntr Asy 2	RPCM_N1RS2_C_RPC_08	RPCM_N1RS1_B_RPC_06
Cntr Asy 3	RPCM_N1RS2_C_RPC_10	RPCM_N1RS1_B_RPC_13
Cntr Asy 4	RPCM_N1RS2_C_RPC_11	RPCM_N1RS1_B_RPC_14
STARBOARD	-----	-----
Cntr Asy 1	RPCM_N1RS2_A_RPC_05	RPCM_N1RS1_C_RPC_05
Cntr Asy 2	RPCM_N1RS2_A_RPC_06	RPCM_N1RS1_C_RPC_06
Cntr Asy 3	RPCM_N1RS2_A_RPC_10	RPCM_N1RS1_C_RPC_12
Cntr Asy 4	RPCM_N1RS2_A_RPC_11	RPCM_N1RS1_C_RPC_13

1. Verify Primary, Secondary RPCs supplying applicable CBM are Op.

PCS

S&M

**[N1 [X] CBM Display]** [X] = Fwd, Zenith, Nadir, Port, Starboard  
'Controller Panel Assy Power/Data Status'

✓Pri Pwr RPC Contr Assy [Y] = Op [Y] =  1  2  3  4

See Table 1.

✓Sec Pwr RPC Contr Assy [Y] = Op [Y] =  1  2  3  4

See Table 1.

**CAUTION**

Equipment contains parts sensitive to  
damage by Electrostatic Discharge (ESD).

2. Don static wrist tether. Secure clip end to unpainted metal surface.

**REMOVE**

See Figure 1.

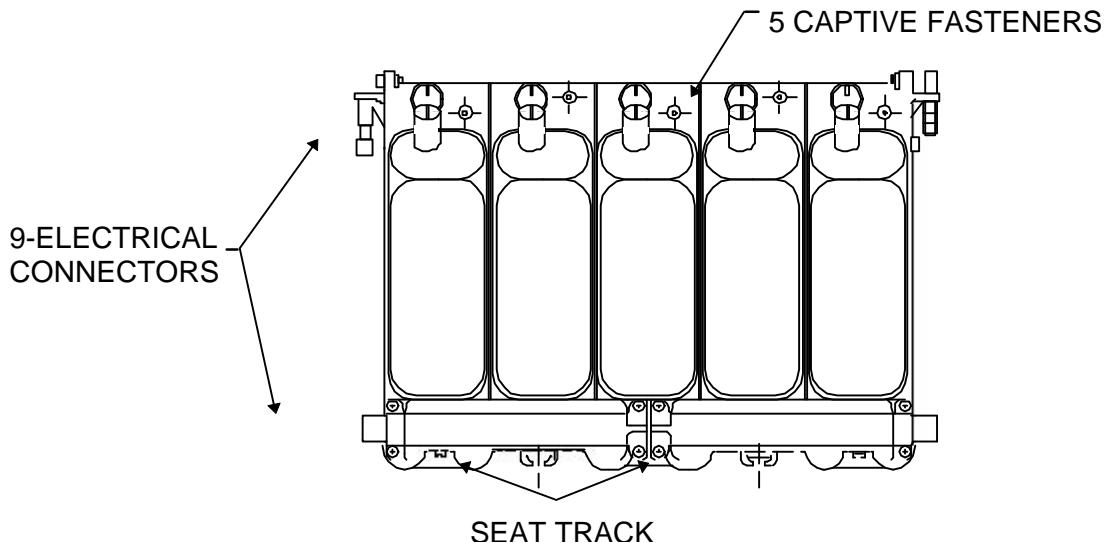


Figure 1.- CBM Controller Panel Assembly.

3. Label power/data cables with corresponding J receptacle numbers.
4. Demate power/data cable connectors (nine) from Controller Assembly.  
Tmpty restrain.
5. Disconnect ground straps (two) from Controller Assembly (Ratchet 3/8" Drive, 4 " Ext, 5/32" Hex Head).
6. Loosen fasteners (five), detach from bulkhead (Ratchet 3/8" Drive, 7/16" socket).  
Label, tmpty stow.

**REPLACE**

7. Tighten fasteners (five), torque to  $100 \pm 5$  in-lbs (Ratchet 3/8" Drive, 7/16" Socket, (30-200 in-lbs) Trq Wrench).
8. Connect Controller Assembly ground straps (two) (Ratchet 3/8" Drive, 4" Ext, 5/32" Hex Head).
9. Check for continuity between casing of each Controller Assembly module (seven) and Node 1 structure (Scopemeter).

Table 2. CBM Controller Power/Data Cables

Cable	Plug No.	Receptacle No.	Harness No.
Capture Latch	P1	J5	
Powered Bolt	P1	J6	
Powered Bolt	P1	J7	
Powered Bolt	P1	J8	
Powered Bolt	P1	J9	
Primary Power	P2	J1	
Secondary Power	P1	J3	
1553 Bus Data	P2	J2	
485 Bus Data	P1	J4	

10. Mate all CBM controller power/data cables (nine).  
See Table 1.

CHECK-OUT

11. Perform CBM CONTROLLER ACTIVATION AND CHECKOUT, all (SODF: OSO) for applicable controller.

POST MAINTENANCE

12. Stow failed controller assembly, tools, equipment.
13. Update Maintenance Database.

## **CBM POWERED BOLT ACTUATOR R&R GENERIC**

### OBJECTIVE:

This procedure removes and replaces a failed CBM Powered Bolt Actuator.

### LOCATION:

Installed: Active CBM Docking Ring  
Stowed: \Maintenance Database

### DURATION:

35 minutes

### PARTS:

CBM Powered Bolt Actuator (P/N 683-13621-004)

### MATERIALS:

None

### TOOLS REQUIRED:

Equipment Bag  
Tether  
Kit E:  
    Ratchet 3/8" Drive  
Kit C:  
    3/8" Socket, 3/8" Drive  
Powered Bolt Tool Kit  
Spanner Wrench

### REFERENCED PROCEDURE(S):

POWERED BOLT ASSEMBLY CHECKOUT

### SAFE

#### **WARNING**

Failure to remove power can result in electrical shock hazard.

1. \CBM Controller Pwr - Off

### ACCESS

2. If required, remove vestibule closeout for access by unfastening 1/4 turn fasteners.  
    Tmpry stow.
3. If required, remove ACBM alignment guides for access by loosening fasteners (five per alignment guide) (Ratchet 3/8" Drive, 3/8" Socket).  
    Tmpry stow.

### REMOVE

4. Demate power connector P2 from bolt actuator power receptacle J1.
5. If required for access, remove harness from RTL actuator power receptacle.
6. Demate powered bolt load cell sensor cable from connector bracket (connector P3).

#### NOTE

Spanner Wrench is labeled to identify correct threaded collar removal (OFF) and installation (ON) orientation. See Figure 1.

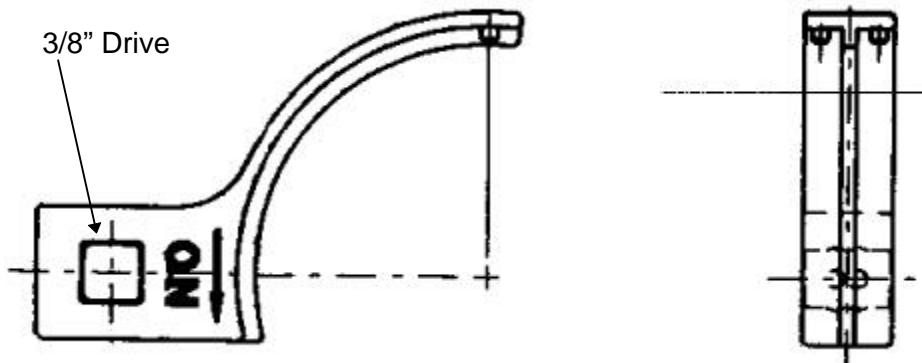


Figure 1.- Spanner Wrench for Actuator Collar.

7. Break torque on threaded collar by inserting spanner wrench pin into one of the holes on threaded collar (Spanner Wrench, Ratchet 3/8" Drive).
8. Turn threaded collar approximately five turns (until collar is loose).
9. Remove powered bolt actuator from powered bolt.  
Temporarily stow.

### REPLACE

10. Mate output gear of replacement powered bolt actuator to input gear of powered bolt.
11. Rotate actuator while pressing it against powered bolt until actuator pins seat in corresponding holes in powered bolt.
12. Turn threaded collar on actuator 1/2 turn past snug (Spanner Wrench, Ratchet 3/8" Drive).
13. Mate power connector P2 to bolt actuator power receptacle J1.
14. If removed earlier, replace harness to RTL actuator power receptacle.
15. Mate powered bolt load cell sensor cable to connector bracket (connector P3).

CHECK-OUT

16. Perform POWERED BOLT ASSEMBLY CHECKOUT procedure (TBD).

CLOSE-OUT

NOTE

Four pins on ACBM alignment guide should mate with corresponding sockets on ACBM docking ring.

17. If ACBM alignment guides were removed, replace alignment guides by rotating fasteners (five) 1/4 turn past snug (Ratchet 3/8" Drive, 3/8" Socket).
18. If vestibule closeout was removed for maintenance, install vestibule closeout, by fastening 1/4 turn fasteners (TBD number).

POST MAINTENANCE

19. Stow failed powered bolt actuator, tools, maintenance supplies.
20. Update Maintenance Database.

## **CBM POWERED BOLT - NUT ASSEMBLY R&R GENERIC**

### OBJECTIVE:

This procedure removes and replaces a defective CBM Powered Bolt - Nut Assembly.

### LOCATION:

Installed: Passive CBM Docking Ring  
Stowed: \Maintenance Database

### DURATION:

TBD

### PARTS:

CBM Powered Bolt - Nut Assembly (P/N 683-13503-001)

### MATERIALS:

None

### TOOLS REQUIRED:

Equipment Bag

Tether

Kit E:

Ratchet 3/8" Drive

Ratchet 1/4" Drive

2" Ext 1/4" Drive

Kit F:

5/16" Socket, 1/4" Drive

Kit C:

3/8" Socket, 3/8" Drive

### REFERENCED PROCEDURE(S):

CBM ACTIVATION AND POWERED BOLT CHECKOUT

### SAFE

#### **WARNING**

Failure to remove power can result in electrical shock hazard.

1. \CBM Controller Pwr - Off

### ACCESS

2. If required, remove vestibule closeout for access by unfastening 1/4 turn fasteners.  
Tmpty stow.
3. If required, remove PCBM alignment guides for access by loosening fasteners (five per alignment guide) (Ratchet 3/8"drive, 3/8" Socket).  
Tmpty stow.

### REMOVE

4. Loosen fasteners (two) on nut plate (Ratchet 1/4" drive, 2" Ext, 5/16" Socket).
5. Grasp end of failed nut assembly, pulling back and away from passive berthing ring.  
Label, tmpry stow.

### REPLACE

#### NOTE

Two alignment pins on nut plate and two alignment holes on inside of passive berthing ring will assist in providing proper alignment during assembly.

6. Align alignment pins (two) on nut plate with alignment holes (two) in passive berthing ring.
7. Slide assembly into alignment holes until there is metal to metal contact.
8. Tighten fasteners (two) 1/4 turn past snug (Ratchet 1/4" Drive, 2" Ext, 5/16" Socket).

### CHECK-OUT

#### NOTE

Prior to reinstallation of alignment guide(s) or closeouts, operation of powered bolt assembly must be verified by complete engagement of powered bolt into nut assembly.

9. Perform CBM ACTIVATION AND POWERED BOLT CHECKOUT, all (SODF: OSO).

### CLOSE-OUT

#### NOTE

There are four alignment pins on alignment guide and four alignment pin sockets on PCBM ring to aid guide installation.

10. If PCBM alignment guides were removed, replace alignment guides by rotating fasteners (five) 1/4 turn past snug (Ratchet 3/8" Drive, 3/8" Socket).
11. If vestibule closeout was removed for maintenance, install vestibule closeout by fastening 1/4 turn fasteners.

### POST-MAINTENANCE

12. Stow defective power bolt nut assembly, tools, maintenance supplies.
13. Update Maintenance Database.

## **CBM POWERED BOLT R&R GENERIC**

### OBJECTIVE:

This procedure removes and replaces a failed CBM Powered Bolt.

### LOCATION:

Installed: Active CBM Docking Ring  
Stowed: \Maintenance Database

### DURATION:

40 minutes (55 minutes if powered bolt is jammed in nut assembly)

### PARTS:

CBM Powered Bolt (P/N 683-13450-001)  
CBM Powered Bolt - Nut Assembly (P/N 683-13503-001) (only required if bolt is jammed in nut)

### MATERIALS:

None

### TOOLS REQUIRED:

Equipment Bag  
Tether  
Scopemeter  
Kit E:  
    Ratchet 3/8" Drive  
    Ratchet 1/4" Drive  
    2" Ext 1/4" Drive  
    3/8" to 1/4" Adaptor  
Kit G:  
    30-200 in-lbs Trq Wrench, 3/8" Drive  
Kit F:  
    5/16" Socket, 1/4" Drive  
Kit C:  
    3/8" Socket, 3/8" Drive  
Kit A:  
    1-5/16" Combination Wrench  
    Powered Bolt Tool Kit  
    Spanner Wrench  
Kit N:  
    1/4" x 5/16" Ratcheting Box Wrench  
    #10 Trq Bit  
Kit J:  
    Large Needle Nose Pliers

### REFERENCED PROCEDURE(S):

POWERED BOLT ASSEMBLY CHECKOUT

SAFE

**WARNING**

Failure to remove power can result in electrical shock hazard.

1. ✓CBM Controller Pwr - Off

ACCESS

2. If required, remove vestibule closeout for access by unfastening 1/4 turn fasteners.  
Tmpty stow.
3. If required, remove ACBM alignment guides for access by loosening fasteners (five per alignment guide) (Ratchet 3/8" Drive, 3/8" Socket).  
Tmpty stow.

REMOVE

4. Demate power connector P2 from bolt actuator power receptacle J1.
5. If required for access, remove harness from RTL actuator power receptacle.
6. Demate powered bolt load cell sensor cable from connector bracket (connector P3).

NOTE

Spanner Wrench is labeled to identify correct threaded collar removal (OFF) and installation (ON) orientation. See Figure 1.

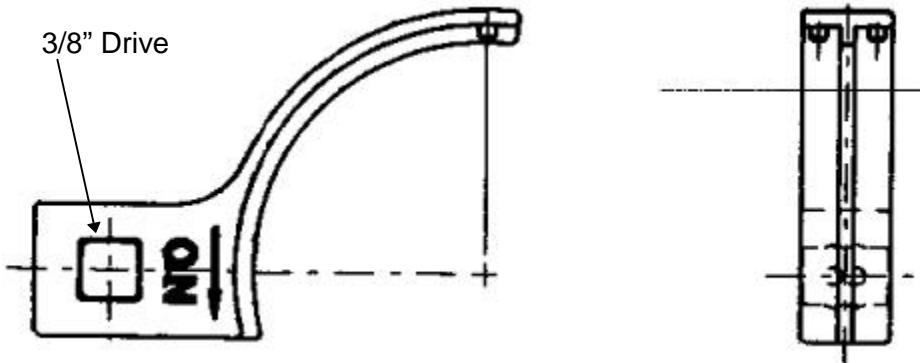


Figure 1.- Spanner Wrench for Actuator Collar.

7. Break torque on threaded collar by inserting spanner wrench pin into one of the holes on threaded collar (Ratchet 3/8" Drive, Spanner Wrench).
8. Turn threaded collar approximately five turns (until collar is loose).

- Remove powered bolt actuator from powered bolt.  
Tempry stow.

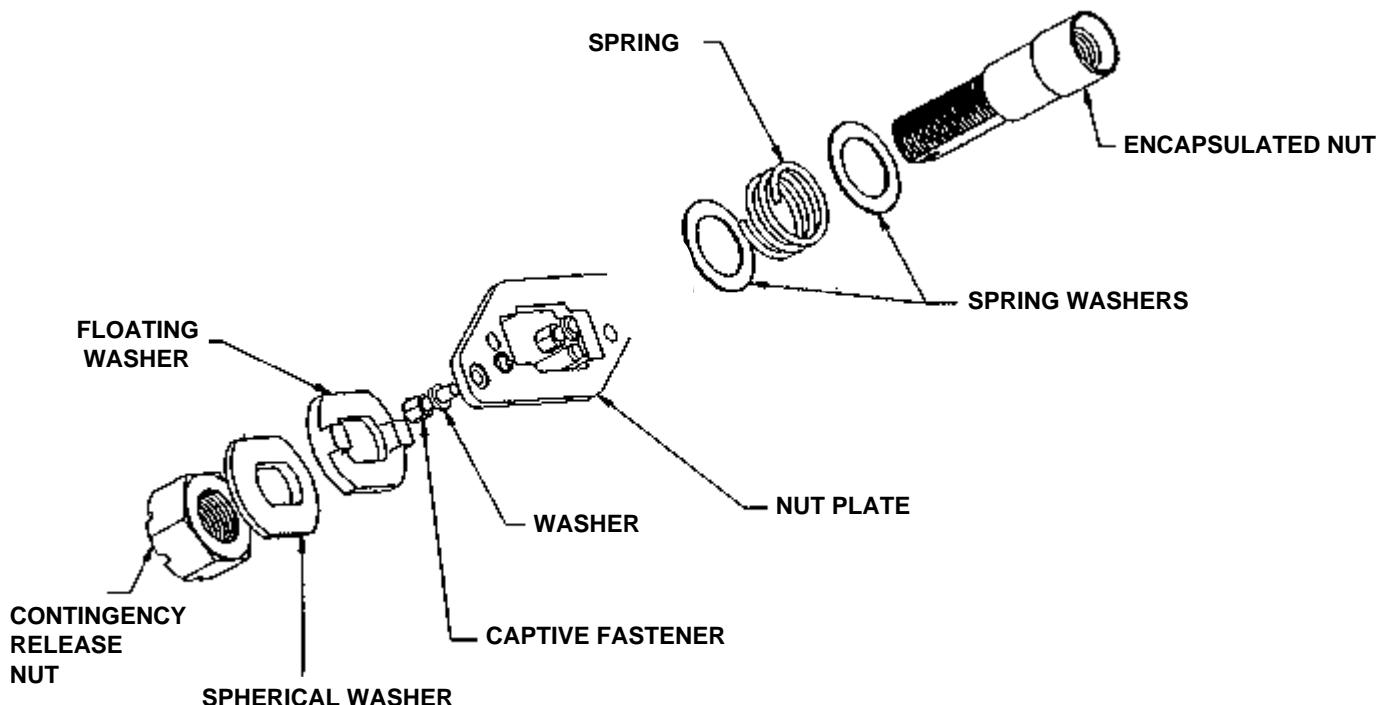


Figure 2.- Powered Bolt Nut Assembly.

- If required for access, remove connector brackets (1/4" x 5/16" Ratcheting Box Wrench, #10 Torq Bit).  
Tempry stow bracket
- If Powered Bolt is jammed in encapsulated nut
  - Remove powered bolt nut assembly contingency release nut (steps 12 --- 18).
  - See Figure 2.
 If Powered Bolt not jammed in encapsulated nut  
Go to step 19.
- If required, remove PCB alignment guides for access by loosening fasteners (five per alignment guide) (Ratchet 3/8" drive, 3/8" Socket).  
Tempry stow.
- Remove cotter pin from end of powered bolt nut assembly (Needle Nose Pliers).  
Tempry stow.

14. Remove contingency release nut and washers (two) from powered bolt nut assembly (1-5/16" Combination Wrench).  
Tmpty stow.

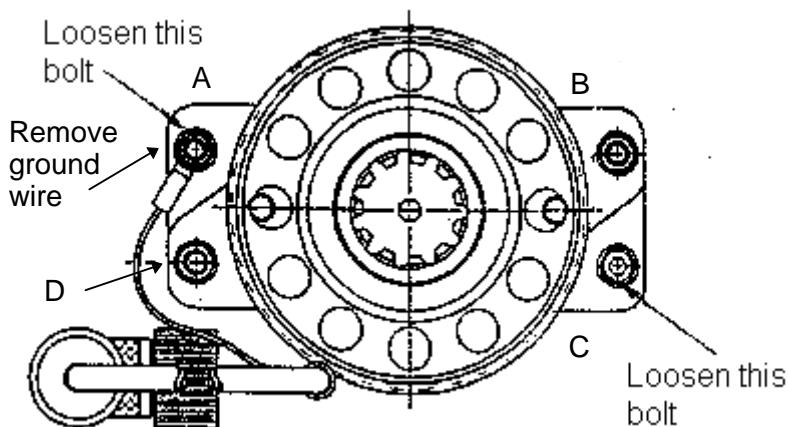


Figure 3.- Powered Bolt - Top View (with Actuator Removed).

NOTE

In steps 15 or 16 loose items may be freed (spring, two washers). See Figure 2. In step 15, ground wire will be released when bolt A is loosened. Note orientation of wire so that it may be reinstalled in a similar manner on spare powered bolt. See Figure 3.

15. Remove powered bolt, encapsulated nut, from ACBM by loosening hex head fasteners (two) (Ratchet 1/4" drive, 2" Ext, 5/16" Socket).  
Tmpty stow.  
See Figure 3.
16. Remove powered bolt nut plate by loosening captive fasteners (two) (Ratchet 1/4" drive, 2" Ext, 5/16" Socket).  
Tmpty stow Nut Plate and loose assembly items.

NOTE

Two alignment pins on spare powered bolt nut assembly should mate with corresponding sockets on PCBM docking ring.

17. Install powered bolt nut assembly on PCBM ring, snug fasteners (two) (Ratchet 1/4" Drive, 2" Ext, 5/16" Socket).

NOTE

Four pins on PCBM alignment guide should mate with corresponding sockets on PCBM docking ring.

18. If PCB alignment guides were removed, reinstall by rotating fasteners (five), 1/4 turn past snug (Ratchet 3/8" Drive, 3/8" Socket).  
Go to step 20.
19. Remove powered bolt from ACBM by loosening fasteners (two) (Ratchet 1/4" Drive, 2" Ext, 5/16" Socket, 1/4" Drive).  
Label, tmpry stow.  
See Figure 3.

REPLACE

NOTE

Two alignment pins on bottom side of powered bolt mounting plate should mate with corresponding pin sockets on ACBM docking ring.

20. Insert bottom of powered bolt into recessed hole in ACBM ring.
21. Slide powered bolt into alignment holes until metal to metal contact is felt.
22. Slide lug on ground cable under washer of fastener A or C.  
See Figure 3.
23. Rotate fasteners (two), 1/4 turn past snug (Ratchet 1/4" Drive, 5/16" Socket), torque to 43 --- 48 in-lb ((30-200 in-lbs) Trq Wrench, 3/8" to 1/4" Adaptor, 2" Ext, 5/16" Socket).
24. Check for continuity between casing of powered bolt actuator and ACBM ring structure.

NOTE

Final alignment of actuator should be such that power/data receptacle on actuator is pointed in inboard direction.

25. Mate output gear of powered bolt actuator to input gear of powered bolt.
26. Rotate actuator while pressing it against powered bolt until actuator pins seat in corresponding holes in powered bolt.
27. Turn threaded collar on actuator 1/2 turn past snug, torque to  $145 \pm 15$  in-lbs (Spanner Wrench, Ratchet 3/8" Drive, (30-200 in-lbs)Trq Wrench).
28. Mate power connector P2 to bolt actuator power receptacle J1.
29. Mate powered bolt load cell sensor cable to connector bracket (connector P3).

CHECK-OUT

30. Perform POWERED BOLT ASSEMBLY CHECKOUT, all (SODF: OSO).

CLOSE-OUT

NOTE

Four pins on PCB M alignment guide should mate with corresponding sockets on ACBM docking ring.

31. If ACBM alignment guides were removed for maintenance, replace alignment guides by rotating fasteners (five) 1/4 turn past snug (Ratchet 3/8" Drive, 3/8" Socket).
32. If vestibule closeout was removed for maintenance, install vestibule closeout by fastening 1/4 turn fasteners.

POST MAINTENANCE

33. Stow failed powered bolt, failed powered bolt-nut assembly (if applicable), tools, equipment.
34. Update Maintenance Database.

## **CBM READY-TO-LATCH ASSEMBLY R&R GENERIC**

### OBJECTIVE:

This procedure removes and replaces a failed CBM Ready to Latch Assembly (RTLA).

### LOCATION:

Installed: Active CBM Docking Ring  
Stowed: \Maintenance Database

### DURATION:

TBD minutes

### PARTS:

CBM Ready-to-Latch Assembly (PN 683-13729-001)

### MATERIALS:

None

### TOOLS REQUIRED:

Equipment Bag

Tether

Kit G:

Ratchet 3/8" Drive

Kit E:

3/8" Socket, 3/8" Drive

Kit TBD:

Pip Pin (Special Purpose Tool?)

### REFERENCED PROCEDURE(S):

READY TO LATCH CHECKOUT

### SAFE

#### **WARNING**

Failure to remove power can result in electrical shock hazard.

1. \CBM Controller Pwr - Off

### ACCESS

2. If required, remove vestibule closeout for access by unfastening 1/4 turn fasteners.  
Tmpty stow.

## **WARNING**

Foot must be locked in stowed position. Failure to do so may result in personal injury or damage to equipment.

3. Press button on end of Pip Pin, push pin through hole in body to the RTLA and into foot, locking foot in stowed position.
4. Loosen fasteners (five) (Ratchet 3/8" Drive, 3/8" Socket).
5. Slide alignment guide away from PCBM ring, separating alignment guide pins (four) from alignment guide pin sockets.  
Tmpty stow.

### REMOVE

#### NOTE

Foot of RTLA should be released to unstowed position to allow access to electrical connector and mounting bolts.

6. Apply pressure to outer edge of foot to prevent it from springing up when Pip Pin is removed.
7. Press button on end of Pip Pin to allow locking balls to retract.
8. Pull Pip Pin out of foot and body.  
Tmpty stow Pip Pin.
9. Demate electrical connector from RTLA connector.
10. Loosen fasteners (two) (Ratchet 3/8" Drive, 3/8" Socket).
11. Pull RTLA away from active berthing ring, label.  
Label, tmpty stow.

### REPLACE

12. Place replacement RTLA in position so mounting fasteners align with their mounting receptacles.
13. Tighten fasteners (two) 1/4 turn past snug (Ratchet 3/8" Drive, 3/8" Socket).
14. Connect RTLA connector (P4) to RTLA receptacle.

### CHECK-OUT

15. Perform RTLA CHECKOUT, all (SODF: OSO).

### CLOSE-OUT

16. Push RTLA foot to the stowed position.
17. Press button on end of Pip Pin, push pin through hole in body of RTLA and into foot, locking foot in stowed position.

#### NOTE

There are four alignment pins on alignment guide and four alignment pin sockets on CBM ring to aid guide installation.

18. Align pins (four) on alignment guide with pin sockets on CBM ring.
19. Slide alignment guide against CBM ring until guide is flush against CBM ring.
20. Tighten captive fasteners (five) 1/4 turn past snug (Ratchet 3/8" Drive, 3/8" Socket).
21. Press button on end of Pip Pin, pull pin out of foot and RTLA body.  
Tmpty stow.
22. If vestibule closeout was removed, install vestibule closeout by fastening 1/4 turn fasteners (TBD number).

### POST-MAINTENANCE

23. Stow failed RTLA, tools, equipment.
24. Update Maintenance Database.

## CETA HALIDE LAMP R&R - IVA

### OBJECTIVE:

Remove and replace failed CETA Light Halide Lamp.

### LOCATION:

Installed: External, Multiple Locations

Stowed: √Maintenance Database

### DURATION:

30 minutes

### PARTS:

40 Watt, Metal Halide Lamp (P/N C60S0001-1)

### MATERIALS:

Tape

### TOOLS REQUIRED:

Equipment Bag

Kit D:

7/64" Hex Head Driver, 1/4" Drive

Kit E:

Driver Handle 1/4" Drive

Kit G

(5-35 in-lbs) Trq Driver, 1/4" Drive

### REFERENCED PROCEDURE(S):

None

#### NOTE

Prior to this procedure, CETA Light is removed  
EVA and brought inside for I-Level Maintenance.

#### **WARNING**

Breakage of the CETA Light Halide Lamps could introduce contaminants into the atmosphere.  
Failure to contain contaminant could result in toxic hazard.

### SAFE

1. √Halide Lamp is intact.
2. If Halide Lamp is not intact, √MCC
  - If Halide Lamp intact, continue.

REMOVE

3. Loosen fasteners (twelve) (Driver Handle 1/4" Drive, 7/64" Hex Head).
4. Remove retaining ring, cover glass, cover glass gasket from CETA Light.  
Tmpty stow.
5. Unlock housing spring clips (four) securing failed Halide Lamp, remove from CETA Light insulator.  
Tmpty stow.

REPLACE

6. Install replacement Halide Lamp in insulator of CETA Light.
7. Lock housing spring clips (four) securing Halide Lamp in CETA Light insulator.
8. Replace cover glass gasket, cover glass, retaining ring on CETA Light.
9. Tighten fasteners (twelve) to secure CETA Light retaining ring (Driver Handle 1/4" Drive, 7/64" Hex Head).
10. Torque fasteners (twelve) to 26 in-lbs ((5-35 in-lbs) Trq Driver, 1/4" Drive, 7/64" Hex Head).

POST MAINTENANCE

11. Stow failed Halide Lamp, tools, equipment.
12. Update Maintenance Database.

## HATCH ROLLER ASSEMBLY R&R

### OBJECTIVE:

Remove and replace a defective Hatch Roller Assembly.

### LOCATION:

Installed: U.S. Common Hatch IVA side

Stowed: \Maintenance Database

### DURATION:

10 minutes

### PARTS:

Hatch Roller Assembly (P/N 683-13060-2)

### MATERIALS:

None

### TOOLS REQUIRED:

Kit C:

3/8" 12 Pt Socket

Kit E:

Ratchet, 3/8" Drive

4" Ext

Kit G:

Trq Wrench (30-200 in-lbs)

### REFERENCED PROCEDURE(S):

None

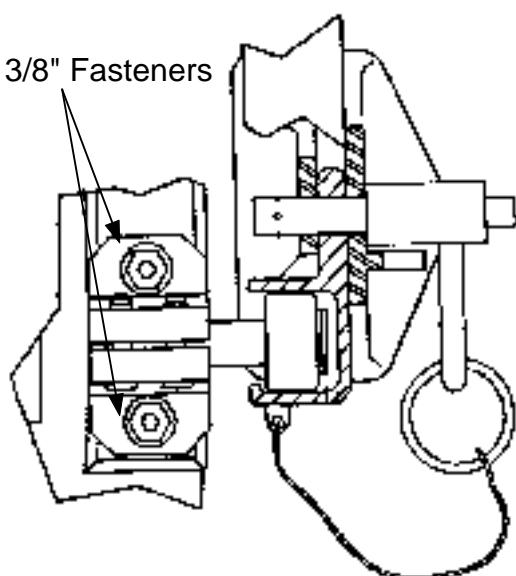


Figure 1.- Hatch Roller Assembly.

## **WARNING**

To ensure crewmembers have immediate ingress/egress between modules in case of emergency, hatch latches can not be engaged

### REMOVE

1. Close but do not latch Hatch.
2. Remove failed Roller Assembly, fasteners (two) (Ratchet 3/8" Drive, 3/8" Socket, 4" Ext).  
Label, tmpry stow.

### REPLACE

3. Install replacement Roller Assembly. Fasteners (two) torque to  $98 \pm 8$  in-lbs (Ratchet 3/8" Drive; 3/8"Socket, 4" Ext) (30-200 in-lbsTrq Wrench).

### POST MAINTENANCE

4. Operate Hatch in tracks to ensure proper operation of roller.
5. Stow failed roller assembly, equipment.
6. Update Maintenance Database.

## HATCH SEAL R&R

### OBJECTIVE:

Remove and replace Hatch Seal.

### LOCATION:

Installed: Hatch Bulkhead

Stowed: \Maintenance Database

### DURATION:

### PARTS:

Hatch Seal (P/N 683-13095-3)

### MATERIALS:

Dry Wipes

Tape

Gloves, Disposable

Braycote, Grease

### TOOLS REQUIRED:

Fluid System Servicer

Kit D:

1/8" Hex Head, 1/4" Drive

Kit E:

Ratchet 1/4" Drive

Driver Handle 1/4" Drive

Kit G:

(5-35 in-lbs) Trq Driver, 1/4" Drive

IVA Tool Box, Lid #1:

Nonmetallic Feeler Gauge

Magnifying Glass (7X)

### REFERENCED PROCEDURE(S):

None

### REMOVE

1. Inspect replacement hatch seals visually for nicks, burrs, cuts, gouges, etc. that would impair proper seal (Magnifying Glass 7X).

#### NOTE

1. If defects found use another seal assembly.
2. Hatch seal has four assemblies. Only failed will be replaced.
3. Hatch seal assemblies adjacent to either end of failed hatch seal assembly must be loosened prior to removing failed hatch seal assembly.

2. Loosen fasteners (seventeen) on failed Hatch seal.
3. Loosen, but do not release fasteners (thirty-four) on two seals adjacent to failed seal (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
4. Loosen fasteners (four) completely on end of one adjacent seal (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
5. Loosen fasteners (four) completely on end of other adjacent seal (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).

**CAUTION**

Do not damage bulkhead or adjacent seals when removing failed seal.

**NOTE**

Seal assembly contains lubricant. Avoid smearing on hands, glass, or hardware.

6. Separate failed seal.  
Tmpty stow.
7. Clean bulkhead sealing surface to visibly clean level (Dry Wipe).

**REPLACE**

8. Don gloves.
9. Clean replacement hatch seal to visibly clean level prior to installation (Dry Wipe).
10. Apply thin film of Braycote to crowns and ends of both seal beads and seal metal substrate on bulkhead side of seal.
11. Doff gloves.

**CAUTION**

When placing replacement hatch seal on bulkhead ensure captive fasteners do not scratch bulkhead surface.

12. Position seal on bulkhead, tighten fastener in center of seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
13. Tighten fastener (two) on each end of replacement seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
14. Tighten fastener on end of one adjacent seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).

NOTE

Hatch seal assemblies must be held as close to bulkhead as possible to prevent damage to seals.

15. Grasp end of replacement seal by metal section and end of same adjacent seal in step fourteen and mate ends of seals.
16. Seat replacement seal to same adjacent seal in step fourteen by sliding joint approximately fifty percent beyond flush, then by returning to flush.
17. Tighten fastener on end of second adjacent hatch seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
18. Grasp other end of replacement hatch seal by metal section and end of second adjacent seal and mate ends.
19. Seat replacement seal other end to second adjacent seal in step fourteen by sliding joint approximately fifty percent beyond flush, then returning to flush.

NOTE

Tighten fasteners alternating sides (left and right) working from center fastener toward ends.

20. Tighten fasteners (fifteen) on replacement seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
21. Tighten fasteners (sixteen) on adjacent seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
22. Tighten fasteners (sixteen) on remaining adjacent seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
23. Torque fasteners (seventeen) on replacement seal to  $12 \pm 2$  in-lbs ((5-35 in-lbs) Trq Wrench, 1/8" Hex Head 1/4" Drive).
24. Torque fasteners (seventeen) on adjacent seal to  $12 \pm 2$  in-lbs ((5-35 in-lbs) Trq Wrench, 1/8" Hex Head 1/4" Drive).
25. Torque fasteners (seventeen) on remaining adjacent seal to  $12 \pm 2$  in-lbs ((5-35 in-lbs) Trq Wrench, 1/8" Hex Head 1/4" Drive).
26. Clean all hatch seals to visibly clean level (Dry Wipes).
27. Don gloves.
28. Lubricate hatch-side of all hatch seal crowns, joints, and black rubber bumpers (Braycote).

29. Doff gloves.
30. Mark approximate location of latches on inner side of Hatch (Tape).
31. Close and latch Hatch.

**NOTE**  
Gap between hatch plate and hatch seal metal substrate .015 to .025 inches at latches and .030 to .035 at each corner.

32. Measure gap at latches (eight) and corners (four) (Nonmetallic Feeler Gauge).

**NOTE**  
Only latches out of tolerance need to be adjusted.

33. Open Hatch.
34. Translate to Rib side, close Hatch and operate till pointer is at "EQUALIZE" position.
35. Turn vertical adjustment screw one quarter turn CW to close gap, CCW to widen gap on each latch that is out of tolerance (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
36. Open Hatch.
37. Translate to dome side, close/latch Hatch and measure gaps (twelve) (Nonmetallic Feeler Gauge).
38. If gaps are within tolerance, continue with procedure.  
|  
If gaps are not within tolerance, go to step 33.
39. Translate to Rib side with Fluid System Servicer.
40. Remove nut securing blind gland to Hatch bulkhead (Ratchet 1/4" Drive, 7/16" Socket).  
Tmpty stow.

**NOTE**  
Hatch seal integrity will be verified by leak test.

41. Attach FSS TBD adapter to FSS.
42. Attach FSS to bulkhead leak check port.

43. Close Hatch.
44. Operate FSS per operating procedures.
45. Draw vacuum through leak check port.
46. Leak rate of less than .0034 secs of air indicates seals acceptable.
47. Turn off FSS.
48. Disconnect FSS from bulkhead and adapter.
49. Tighten nut over blind gland until blind gland is seated with no free movement (Ratchet 1/4" Drive, 7/16" Socket 1/4" Drive).
50. Tighten nut over blind gland an additional eighth of a turn (Ratchet 1/4" Drive, 7/16" Socket 1/4" Drive).

POST MAINTENANCE

51. Stow failed hatch seal, tools, equipment.
52. Update Maintenance Database.

## **HATCH SOFT HANDLE ASSEMBLY R&R**

### OBJECTIVE:

Remove and replace a defective Hatch Soft Handle Assembly.

### LOCATION:

Installed: U.S. Common Hatch IVA side  
Stowed: \Maintenance Database

### DURATION:

10 minutes

### PARTS:

Hatch Soft Handle Assembly (P/N 683-13048)

### MATERIALS:

None

### TOOLS REQUIRED:

Kit C:

3/8" 12 Pt Socket

Kit E:

Ratchet, 3/8" Drive

4" Ext

Kit G:

Trq Wrench (30-200 in-lbs)

### REFERENCED PROCEDURE(S):

None

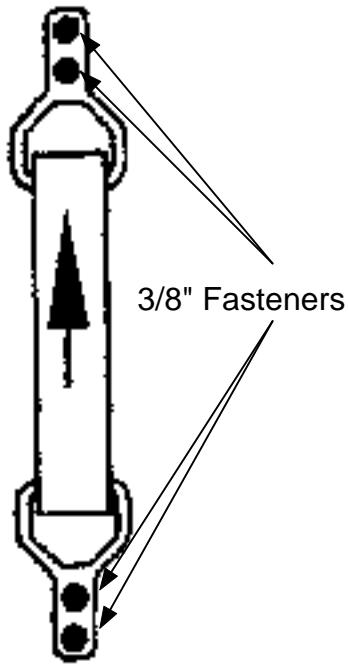


Figure 1.- Hatch Soft Handle.

#### **WARNING**

To ensure crewmembers have immediate ingress/egress between modules in case of emergency, hatch latches can not be engaged.

#### REMOVE

1. Close but do not latch Hatch.
2. Remove failed soft handle, fasteners (four) (Ratchet 3/8" Drive, 3/8" Socket, 4" Ext).  
Label, tmpry stow.

#### REPLACE

3. Install replacement soft handle assembly, fasteners (four) torque to  $90 \pm 6$  in-lbs (Ratchet 3/8" Drive, 3/8" Socket, 4" Ext, Trq Wrench).

#### POST MAINTENANCE

4. Stow failed soft handle, tools.
5. Update Maintenance Database.

## HATCH TENSION ROD/LATCH R&R

### OBJECTIVE:

Remove and replace tension rod/latch assembly

### LOCATION:

Installed: U.S. Common Hatch Rib Side

Stowed: \Maintenance Database

### DURATION:

25 minutes

### PARTS:

Hatch tension rod assembly (PN 683-13012-1)

### MATERIALS:

None

### TOOLS REQUIRED:

Kit A:

7/16" Combination Wrench  
9/16" Combination Wrench  
9/16" Crowfoot, 3/8" Drive

Kit C:

1/2" Socket, 3/8" Drive

Kit D:

1/8" Hex Head, 3/8" Drive

Kit E:

Ratchet 3/8" Drive  
1/4" - 3/8" Adapter  
4" Ext 3/8" Drive

Kit G:

(30-200 in-lbs)Trq Wrench, 3/8" Drive  
(5-35 in-lbs)Trq Driver, 1/4" Drive

Kit J:

Retaining Ring Tool Straight

IVA Tool Box, Lid #1:

Nonmetallic Feeler Gauge  
Caliper, Dial Type

### REFERENCED PROCEDURE(S):

LCN S9ASHA, Task GBCOAAA

### **WARNING**

To ensure crewmembers have immediate ingress/egress between modules in case of emergency, hatch latches can not be engaged.

NOTE

Tension rod assembly and latch assembly remain together and are moved to maintenance work area for separation, because of small parts.

REMOVE

1. Close, do not latch Hatch.
2. Unfasten captive fasteners (four) (Ratchet 3/8" Drive) (1/2" Socket) (4" Ext).
3. Release quick release pin (one) securing failed tension rod assembly to slider.
4. Place failed tension rod in maintenance work area.
5. Remove retaining ring from pin (Retaining Ring Pliers).
6. Remove pin (one) securing tension rod to latch.
7. Separate tension rod, latch.
8. Replace failed part with new tension rod/latch depending on which part has failed.
9. Insert pin into aligned tension rod/latch.
10. Install retaining ring onto end of pin (Retaining Ring Pliers).

REPLACE

11. Position latch assembly onto hatch plate.
12. Hand tighten captive fasteners (four). Torque fasteners (four) to  $188 \pm 15$  in-lbs ((30-200 in-lbs) Trq Wrench, Ratchet 3/8" Drive, 1/2" Socket, 4" Ext).
13. Align tension rod to slider hole, insert quick disconnect pin.

NOTE

Hatch should be in fully unlatched position before continuing with procedure. Failure to do so may result in improper latch adjustment.

14. Rotate set screw on top of latch clockwise until it stops (Ratchet 3/8" Drive) (1/8" Hex Head).
15. Loosen jam nut on tension rod (9/16" Combination Wrench).

16. Find dead center point of latch travel by rotating tension rod CCW until vertical movement of latch roller reverses direction (7/16" Combination Wrench).
17. Rotate tension rod CW until latch roller begins to move away from hatch plate.
18. Verify that the gap between the latch roller and hatch plate does not exceed .0015 (Feeler Gauge).
19. If gap is per requirements, continue with maintenance procedure.
  - |
20. If not set per requirements, reposition roller to gap measurement.
21. Tighten jam nut on tension rod.
22. Torque jammnut to  $20 \pm 2$  in-lbs (5-35 in-lbs) Trq Driver, 1/4" to 3/8" Adapter, 9/16" Crowfoot.
23. Adjust setscrews to achieve 1.100/1.050" dimension between hatch plate and nearest point of latch roller (1/8" Hex Head).
24. Verify measurement (Caliper).
25. If gap is per requirements, continue procedure.
  - |
26. If gap is not per requirements, reposition latch assembly to proper gap measurement (1/8" Hex Head).
27. Measure length of an adjacent tension rod shaft from base of jam nut to edge of latch attach bracket (Caliper).
28. If lengths are not equal  $\pm .050"$ , readjust tension rod.
  - |
29. If lengths are equal  $\pm .050"$ , continue procedure.
30. Turn crank to ensure proper operation of Hatch.
31. Latch Hatch to check seal gap in accordance with LCN S9ASHA, Task GBCOAAA.

#### POST MAINTENANCE

32. If gap is per requirement, continue procedure.
  - |
33. If gap is not per requirement, gap in accordance with LCN S9ASHA, Task GBCOAAA.
34. Stow failed tension/latch assembly, tools and maintenance supplies.
35. Update Maintenance Database.

## HATCH OUTER WINDOW ASSEMBLY R&R

### OBJECTIVE:

Remove and replace Hatch Outer Window Assembly (P/N 683-13030-1).

### LOCATION:

Installed: U.S. Common Hatch

Stowed: \Maintenance Database

### DURATION:

25 minutes

### PARTS:

Hatch Inner Window Assembly (P/N 683-13030-1)

### MATERIALS:

Dry Wipes

Deionized Water

### TOOLS REQUIRED:

Kit C:

7/16" Socket, 3/8" Drive

Kit D:

3/16" Hex Head, 3/8" Drive

5/32" Hex Head, 3/8" Drive

Kit E:

Ratchet 3/8" Drive

Kit G:

(30-200 in-lbs) Trq Wrench, 3/8" Drive

IVA Tool Box, Lid #1:

Magnifying Glass 7x

### REFERENCED PROCEDURE(S):

None

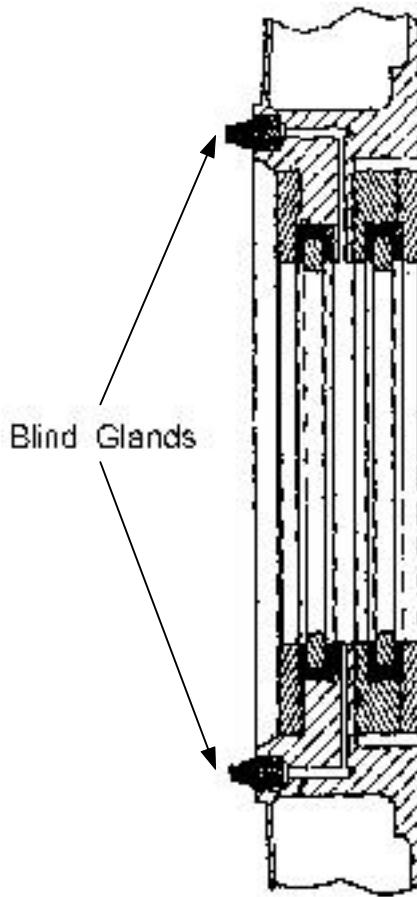


Figure 1.- Common Hatch Window.

**WARNING**

1. To ensure crewmembers have immediate ingress/egress between modules in case of emergency, hatch latches should not be engaged.
2. Failure to equalize pressure between inner and outer windows may prevent removal of failed inner pane.

**NOTE**

Hatch plate assembly contains two blind glands, only one needs to be removed to equalize pressure.

**REMOVE**

1. Remove nut securing blind gland to hatch plate assembly (Dome side) (Ratchet 3/8" Drive, 7/16" Socket). Tmpry stow.
2. Translate to Rib side.

3. Place piece of Tape on Hatch under "TEST" to mark alignment for replacement window.
4. Remove fasteners (two) securing indicator assembly (Ratchet 3/8" Drive, 5/32" Hex Head).  
Tmpty stow.

NOTE

1. Thirty (30) seconds must pass for pressure to equalize between inner and outer hatch windows.
2. Failed outer window assembly contains lubricated seals. Avoid smearing lubricant on hands, glass, or hardware.

5. Loosen fasteners (ten) securing failed hatch outer window assembly to hatch plate assembly (Ratchet 3/8", 3/16" Hex head).  
Tmpty stow.
6. Clean hatch plate window sealing surface (Dry Wipes, Deionized Water).
7. Dry hatch plate window sealing surface (Dry wipe).
8. Inspect hatch plate assembly window area for foreign material on surface (Magnifying Glass 7x).
9. If there is no foreign material or visible scratches on surface  
    | Continue procedure.  
    If there is foreign material or visible scratches on surface  
    | Reclean hatch plate window sealing surface.

REPLACE

NOTE

Replacement outer window assembly contains lubricated seals. Avoid smearing lubricant on hands, glass, or hardware.

10. Position replacement hatch outer window ORU kit hatch plate assembly by a ensuring "TEST" is aligned with tape marker.
11. Align replacement hatch outer window ORU kit fasteners (ten) with holes (ten) in hatch plate assembly.
12. Visually inspect replacement hatch outer window assembly to ensure it is level.

13. If it is level, continue procedure.

If it is not level, reposition window and continue procedure.

**NOTE**

Sequence for fastening captive fasteners (ten) will start at top center right, moving to bottom center left and continuing in star pattern until all captive fasteners (ten) are started.

14. Tighten fasteners (ten) securing replacement hatch outer window assembly to hatch plate assembly (Ratchet 3/8" Drive, 3/16" Hex Head).
15. Visually inspect replacement hatch outer window assembly to ensure it is properly seated.
16. If properly seated, go to step 17 of this procedure.  
If not properly seated, continue procedure.
17. Loosen captive fasteners (10) securing hatch outer window assembly to hatch plate assembly (Ratchet 3/8" Drive, 3/16" Hex Head).
18. Adjust outer window assembly until it is fully seated.
19. Torque captive fasteners (ten) securing replacement hatch outer window assembly to hatch plate assembly  $112 \pm 9$  in-lbs (30-200 in-lbs Trq Wrench, 3/16" Hex Head).
20. Visually inspect replacement hatch outer window assembly to ensure it is properly seated.
21. If not properly seated, go to step 15 of this procedure.  
If properly seated, continue procedure.
22. Tighten nut over blind gland until blind gland is seated with no free movement (Ratchet 3/8" Drive, 7/16" Socket).
23. Tighten nut over blind gland an additional eighth of a turn (Ratchet 3/8" Drive, 7/16" Socket).

**POST MAINTENANCE**

24. Stow failed Inner Window, tools, equipment.
25. Update Maintenance Database.

## HATCH INNER WINDOW ASSEMBLY R&R

### OBJECTIVE:

Remove and replace Hatch Inner Window Assembly.

### LOCATION:

Installed: U.S. Common Hatch IVA side  
Stowed: \Maintenance Database

### DURATION:

20 minutes

### PARTS:

Hatch Inner Window Assembly (P/N 683-13076-1)

### MATERIALS:

Dry Wipes  
Deionized Water

### TOOLS REQUIRED:

#### Kit C:

7/16" Socket, 3/8" Drive

#### Kit D:

3/16" Hex Head, 3/8" Drive

#### Kit E:

Ratchet 3/8" Drive

#### Kit G:

(30-200 in-lbs) Trq Wrench, 3/8" Drive

#### IVA Tool Box, Lid #1:

Magnifying Glass 7x

### REFERENCED PROCEDURE(S):

None

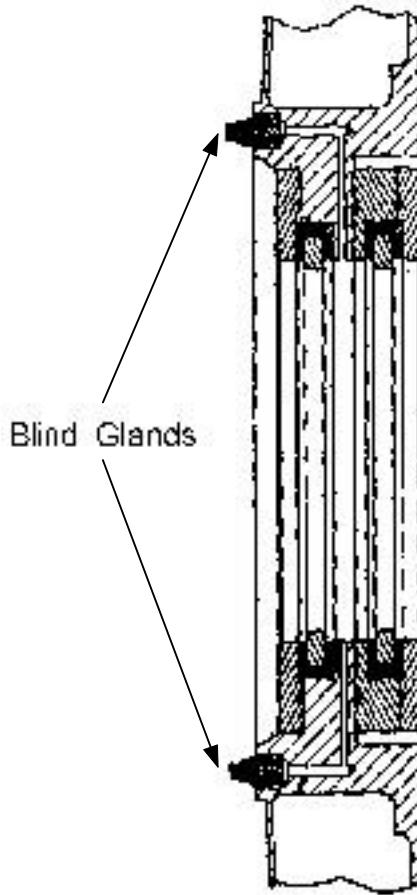


Figure 1.- Common Hatch Window.

#### **WARNING**

1. To ensure crewmembers have immediate ingress/egress between modules in case of emergency, hatch latches should not be engaged.
2. Failure to equalize pressure between inner and outer windows may prevent removal of failed inner pane.

#### NOTE

Hatch plate assembly contains 2 blind glands, only one needs to be removed to equalize pressure.

#### REMOVE

1. Remove nut securing blind gland to hatch plate assembly (Ratchet 3/8" Drive, 7/16" Socket).  
Temporarily stow.
2. Place piece of Tape on Hatch under "TEST" to mark alignment for replacement window.

NOTE

1. Thirty (30) seconds must pass for pressure to equalize between inner and outer hatch windows.
2. Failed inner window ORU kit contains lubricated seals. Avoid smearing lubricant on hands, glass, or hardware.
3. Loosen fasteners (ten) securing failed hatch inner window ORU kit to hatch plate assembly (Ratchet 3/8", 3/16" Hex head).  
Tmpty stow.

NOTE

Hatch inner window ORU kit consists of inner window assembly (1), window pane (1), window pane seal (2), and bumper (1). All parts of failed window ORU kit are removed from hatch plate assembly together.

4. Clean hatch plate window sealing surface (Dry wipes, Deionized Water).
5. Dry hatch plate window sealing surface (Dry wipe).
6. Inspect hatch plate assembly window area for foreign material on surface (Magnifying Glass 7x).
7. If there is no foreign material or visible scratches on surface  
    | Continue procedure.  
    | If there is foreign material or visible scratches on surface  
        Reclean hatch plate window sealing surface.

REPLACE

NOTE

Replacement inner window ORU kit contains lubricated seals. Avoid smearing lubricant on hands, glass, or hardware.

8. Position replacement hatch inner window ORU kit hatch plate assembly by a ensuring "TEST" is aligned with tape marker.
9. Align replacement hatch inner window ORU kit fasteners (ten) with holes (ten) in hatch plate assembly.
10. Visually inspect replacement hatch inner window ORU kit to ensure it is level.

11. If it is level, continue procedure.
  - |  
If it is not level, reposition window and continue procedure.

**NOTE**

Sequence for fastening captive fasteners (ten) will start at top center right, moving to bottom center left and continuing in star pattern until all captive fasteners (ten) are started.

12. Tighten fasteners (ten) securing replacement hatch inner window ORU kit to hatch plate assembly (Ratchet 3/8" Drive, 3/16" Hex Head).
13. Visually inspect replacement hatch inner window ORU kit to ensure it is properly seated.
14. If kit properly seated, go to step 17 of this procedure.
  - |  
If kit not properly seated, continue procedure.
15. Loosen captive fasteners (10) securing hatch inner window ORU kit to hatch plate assembly (Ratchet 3/8" Drive, 3/16" Hex Head).
16. Adjust inner window ORU kit until it is fully seated.
17. Torque captive fasteners (ten) securing replacement hatch inner window ORU kit to hatch plate assembly  $112 \pm 9$  in-lbs (30-200 in-lbs Trq Wrench, 3/16" Hex Head).
18. Visually inspect replacement hatch inner window ORU kit to ensure it is properly seated.
19. If not properly seated, go to step 15 of this procedure.
  - |  
If properly seated, continue procedure.
20. Tighten nut over blind gland until blind gland is seated with no free movement (Ratchet 3/8" Drive, 7/16" Socket).
21. Tighten nut over blind gland an additional eighth of a turn (Ratchet 3/8" Drive, 7/16" Socket).

#### POST MAINTENANCE

16. Stow failed Inner Window, tools, equipment.
17. Update Maintenance Database.

## **RPCM R&R NOD1D1**

### OBJECTIVE:

Remove a failed RPCM and replace it with a spare.

### LOCATION:

Installed: NOD1D1

Stowed: \Maintenance Database

### DURATION:

30 minutes (If Alcove Shear Panels have been removed)

### PARTS:

RPCM-Int Type V (P/N R077419-31)

### MATERIALS:

Wet Wipes

Plastic Bags

### TOOLS REQUIRED:

Equipment Bag

Tethers

Kit E:

Ratchet 3/8" Drive

6" Ext 3/8" Drive

Driver Handle 1/4" Drive

Kit D:

5/32" Hex Head Driver, 1/4" Drive

EVA Kit:

7/16" x 6" Wobble Socket Extension, 3/8" Drive

Kit G:

(5-35 in-lbs) Trq Driver

(30-200 in-lbs) Trq Wrench

### REFERENCED PROCEDURE(S):

RPCM SAFE FOR MAINTENANCE

NODE1 ALCOVE DECK SHEAR PANEL REMOVAL

ACTIVATE RPCM

### SAFE

#### **WARNING**

Failure to remove power can result in electrical shock hazard.

1. Don Anti-Static wrist tether.
2. Perform RPCM SAFE FOR MAINTENANCE, all (SODF: OSO), then:

## ACCESS

3. Remove alcove deck close-out panel, fasteners (ten) (Handle 1/4" Drive, 5/32" Hex Head Driver).  
Tempry stow.
4. If Alcove Deck Shear Panels have not been removed  
Perform NODE1 ALCOVE DECK SHEAR PANEL REMOVAL, all (SODF: OSO), then:  
  
If Alcove Deck Shear panels have been removed  
Go to step 5.

## REMOVE

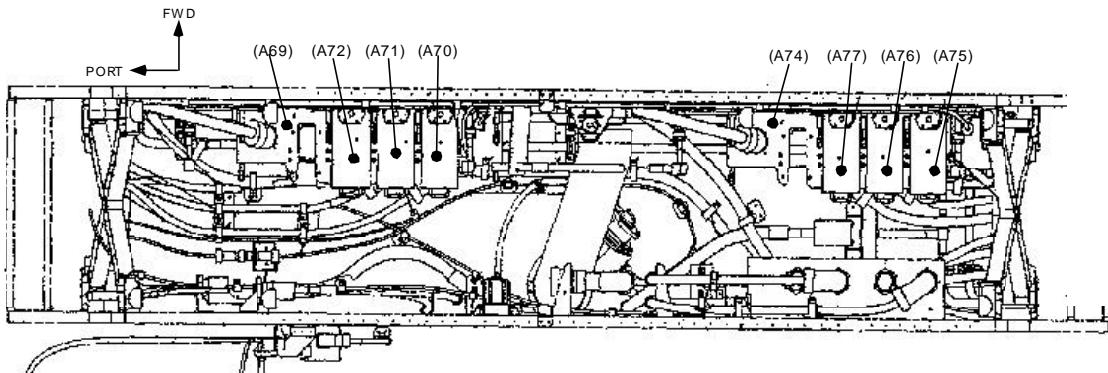


Figure 1.- Nadir View of Node 1 Alcove Deck (with Closeout and Shear Panel Removed).

Table 1. Node 1 Alcove Deck RPDA/RPCM Identification

Name	Ref. Designator	RPCM Type
RPDA N1-RS2	(A74)	N/A
RPCM N1-RS2-A	(A75)	V
RPCM N1-RS2-B	(A76)	V
RPCM N1-RS2-C	(A77)	V
RPDA N1-3B	(A69)	N/A
RPCM N1-3B-A	(A70)	V
RPCM N1-3B-B	(A71)	V
RPCM N1-3B-C	(A72)	V

5. Locate failed RPCM.  
See Table 1 and Figure 1.

### **CAUTION**

Failure to fully seat 7/16" x 6" Wobble Socket Extension, apply constant pressure on drive screw could result in damage to RPCM locking mechanisms.

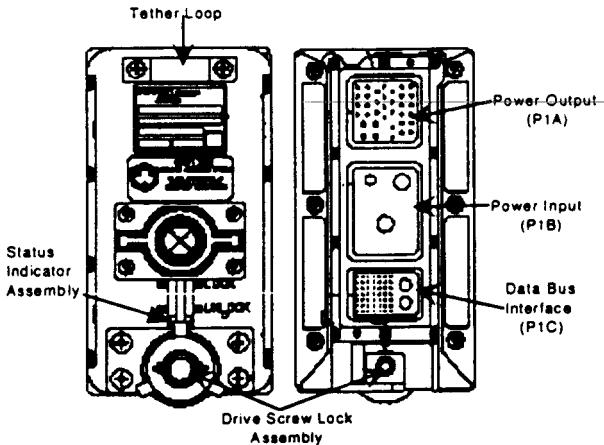


Figure 2.- Remote Power Control Module (Front and Back).

6. Apply pressure, loosen failed RPCM drive screw (Ratchet 3/8" Drive, 7/16" x 6" Wobble Socket Ext).
7. √Status indi - UNLOCK
8. Label, remove failed RPCM from receptacle by sliding it off guide rails.
9. Verify replacement RPCM part number RPCM-Int Type V (P/N R077419-31).
10. Remove electrical connector protective caps (two) from replacement RPCM to failed RPCM.  
Tmpty stow failed RPCM.

**REPLACE**

11. Inspect RPCM and mounting location for foreign matter/debris, damage to alignment guides, pins.
12. Clean coldplate bonding surface with wet wipes.

**CAUTION**

All internal RPCMs have the same physical characteristics. Forcing incorrect spare RPCM into receptacle could bend RPCM connector pins.

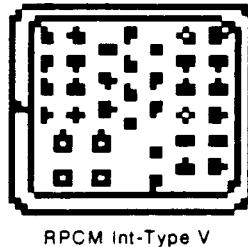


Figure 3.- RPCM Power Out Connector (Node 1).

13. Verify replacement RPCM Power Out connectors pins.  
See Figure 3.
14. Position replacement RPCM on guide rails of RPDA.
15. Insert RPCM into RPCM receptacle until status indicator reaches UNLOCK position.

**CAUTION**

Failure to fully seat 7/16" x 6" Wobble Socket Extension, apply constant pressure on drive screw could result in damage to RPCM locking mechanisms.

16. Apply pressure, tighten RPCM drive screw, torque to  $60 \pm 6$  in-lbs (Ratchet, 3/8" Drive, 7/16" x 6" Wobble Socket Ext, (30-200 in-lbs) Trq Wrench).
17. ✓Status indi - LOCK

CHECK-OUT

18. Perform ACTIVATE RPCM, all (SODF: OSO), then:

CLOSE-OUT

19. Install nadir closeout panel, fasteners (ten) torque to  $14 \pm 2$  in-lbs (Handle 1/4" Drive, 5/32" Hex Head Driver, (5-35 in-lbs) Trq Driver).

POST MAINTENANCE

20. Stow failed RPCM, tools, equipment.
21. Update Maintenance Database.

## RPCM R&R NOD1O1

### OBJECTIVE:

Remove a failed RPCM and replace it with a spare.

### LOCATION:

Installed: NOD1O1

Stowed: \Maintenance Database

### DURATION:

30 minutes (If Alcove Shear Panels have been removed)

### PARTS:

RPCM-Int Type V (P/N R077419-31)

### MATERIALS:

Wet Wipes

Plastic Bag

### TOOLS REQUIRED:

Equipment Bag

Tethers

Kit E:

Ratchet 3/8" Drive

6" Ext 3/8" Drive

Driver Handle 1/4" Drive

Kit D:

5/32" Hex Head Driver, 1/4" Drive

EVA Kit:

7/16" x 6" Wobble Socket Extension, 3/8" Drive

Kit G:

(5-35 in-lbs) Trq Driver

(30-200 in-lbs) Trq Wrench

### REFERENCED PROCEDURE(S):

RPCM SAFE FOR MAINTENANCE

NODE 1 ALCOVE OVHD SHEAR PANEL REMOVAL

ACTIVATE RPCM

### SAFE

#### **WARNING**

Failure to remove power can result in electrical shock hazard.

1. Don Anti-Static wrist tether.
2. Perform RPCM SAFE FOR MAINTENANCE, all (SODF: OSO), then:

## ACCESS

3. Remove alcove ovhd closeout panel, fasteners (ten) (Handle 1/4" Drive, 5/32" Hex Head Driver).  
Tmpry stow.
4. If Alcove Ovhd Shear Panels have not been removed  
Perform NODE 1 ALCOVE SHEAR PANEL REMOVAL, all (SODF: OSO), then:  
  
If Alcove Ovhd Shear Panels have been removed  
Go to step 5.

## REMOVE

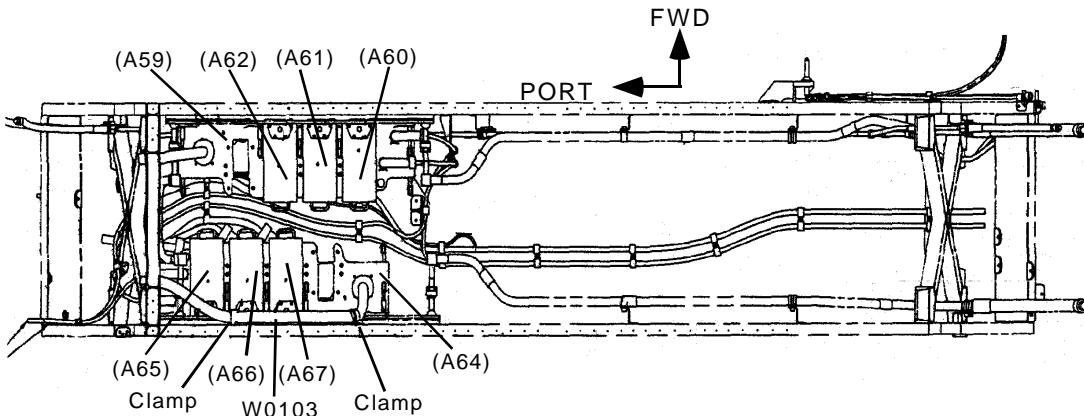


Figure 1.- Nadir View of Node 1 Forward Nadir Alcove (with Closeout and Shear Panel Removed).

Table 1. Node 1 Alcove Ovhd RPDA/RPCM Identification

Name	Ref. Designator	RPCM Type
RPDA N1-RS1	(A64)	N/A
RPCM N1-RS1-A	(A65)	V
RPCM N1-RS1-B	(A66)	V
RPCM N1-RS1-C	(A67)	V
RPDA N1-4B	(A59)	N/A
RPCM N1-4B-A	(A60)	V
RPCM N1-4B-B	(A61)	V
RPCM N1-4B-C	(A62)	V

4. Locate failed RPCM.  
See Figure 1 and Table 1.

### CAUTION

Failure to fully seat 7/16" x 6" Wobble Socket Extension, apply constant pressure on drive screw could result in damage to RPCM locking mechanisms.

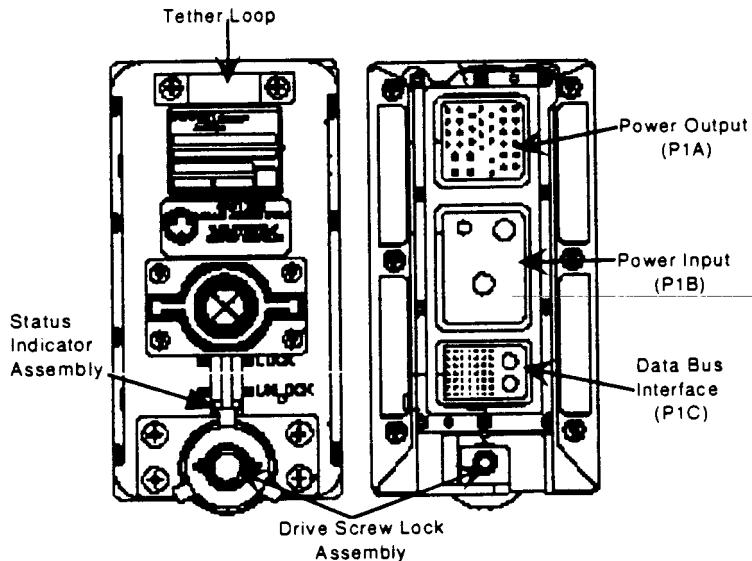


Figure 2.- Remote Power Control Module (Front and Back).

6. Apply pressure, loosen failed RPCM drive screw (Ratchet 3/8" Drive, 7/16" x 6" Wobble Socket Ext).
7. √Status indi - UNLOCK
8. Label, remove failed RPCM from receptacle by sliding it off guide rails.
9. Verify replacement RPCM part number RPCM-Int Type V (P/N R077419-31).
10. Remove electrical connector protective caps (two) from replacement RPCM, install on failed RPCM.  
Temporarily stow failed RPCM.

**REPLACE**

11. Inspect RPCM and mounting location for foreign matter/debris, damage to alignment guides, pins.
12. Clean coldplate bonding surface with Wet Wipes.

**CAUTION**

All internal RPCMs have the same physical characteristics. Forcing incorrect spare RPCM into receptacle could bend RPCM connector pins.

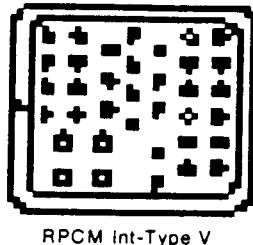


Figure 3.- RPCM Power Out Connector (Node 1).

13. Verify replacement RPCM Power Out connectors pins.  
See Figure 3.
14. Position replacement RPCM on guide rails of RPDA.
15. Insert RPCM into RPCM receptacle until status indicator reaches UNLOCK position.

**CAUTION**

Failure to fully seat 7/16" x 6" Wobble Socket Extension, apply constant pressure on drive screw could result in damage to RPCM locking mechanisms.

16. Apply pressure, tighten RPCM drive screw, torque to  $60 \pm 6$  in-lbs (Ratchet, 3/8" Drive, 7/16" x 6" Wobble Socket Ext, (30-200 in-lbs) Trq Wrench).
17. ✓Status indi - LOCK

CHECK-OUT

18. Perform ACTIVATE RPCM procedure.

CLOSE-OUT

19. Install zenith closeout panel. Fasteners (ten), torque to  $14 \pm 2$  in-lbs (Handle 1/4" Drive, 5/32" Hex Head Driver, (5-35 in-lbs) Trq Driver).

POST MAINTENANCE

20. Stow failed RPCM, tools, equipment.
21. Update Maintenance Database.

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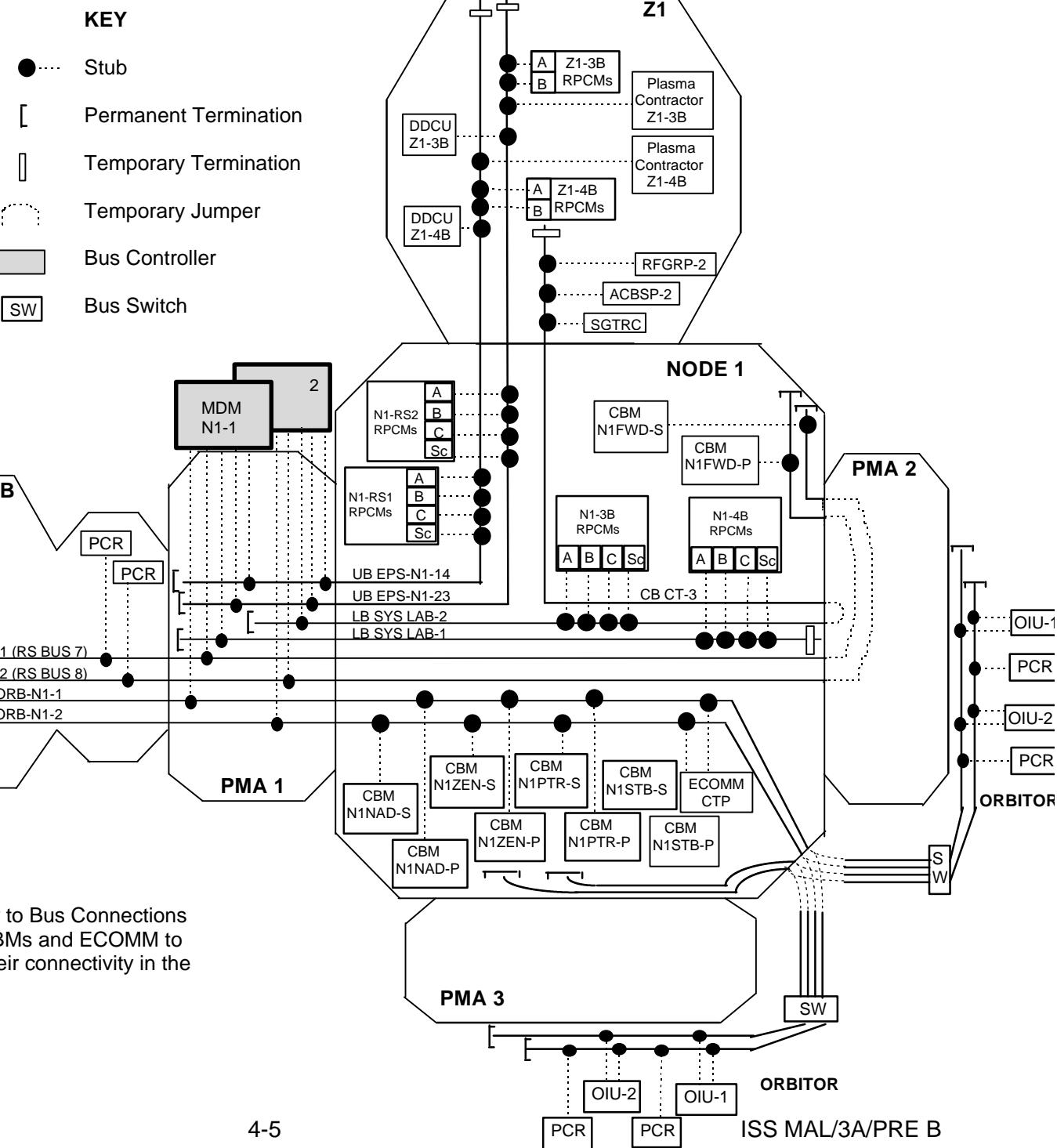
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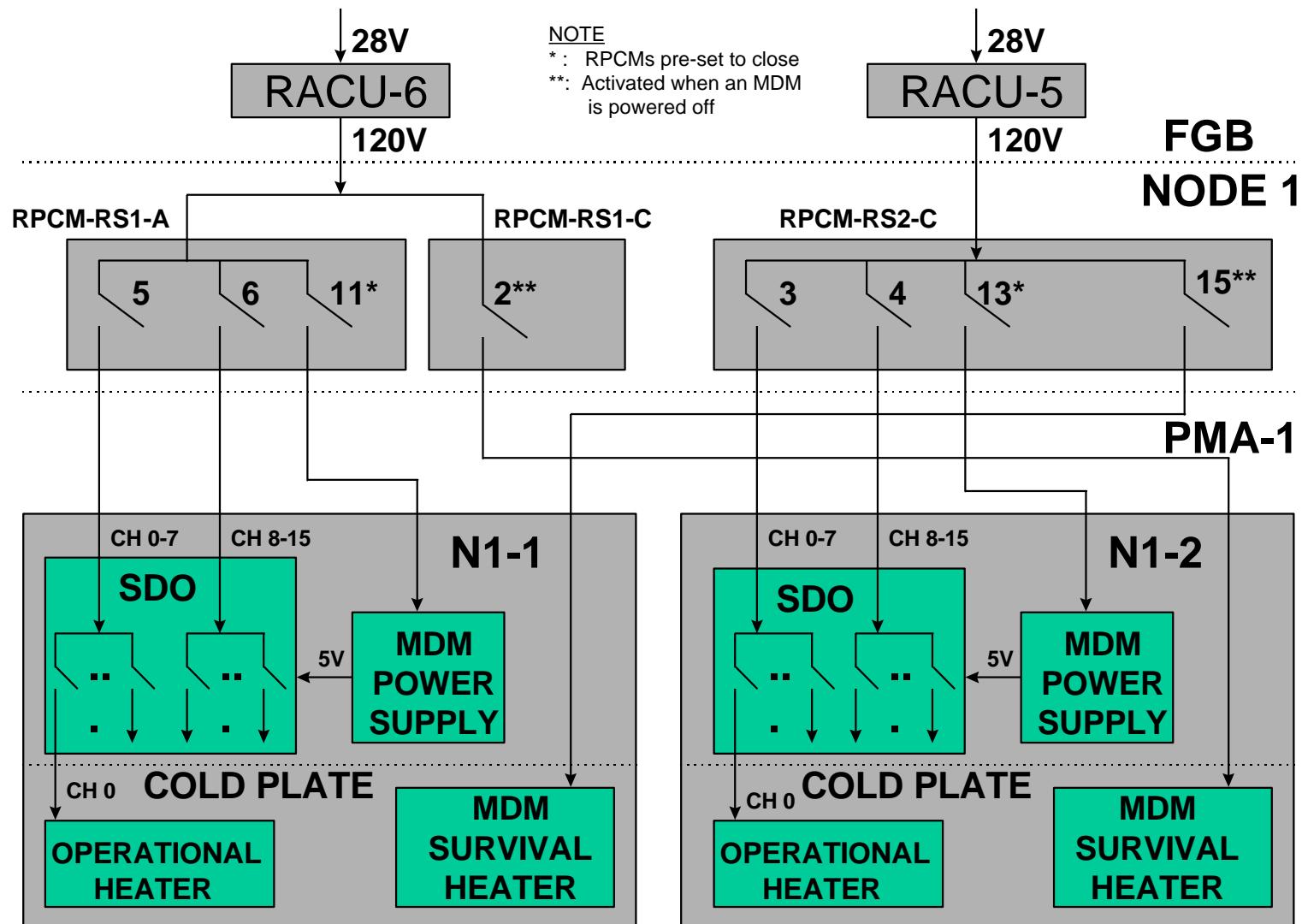
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C&DH

# FLIGHT 3A C&DH OVERVIEW





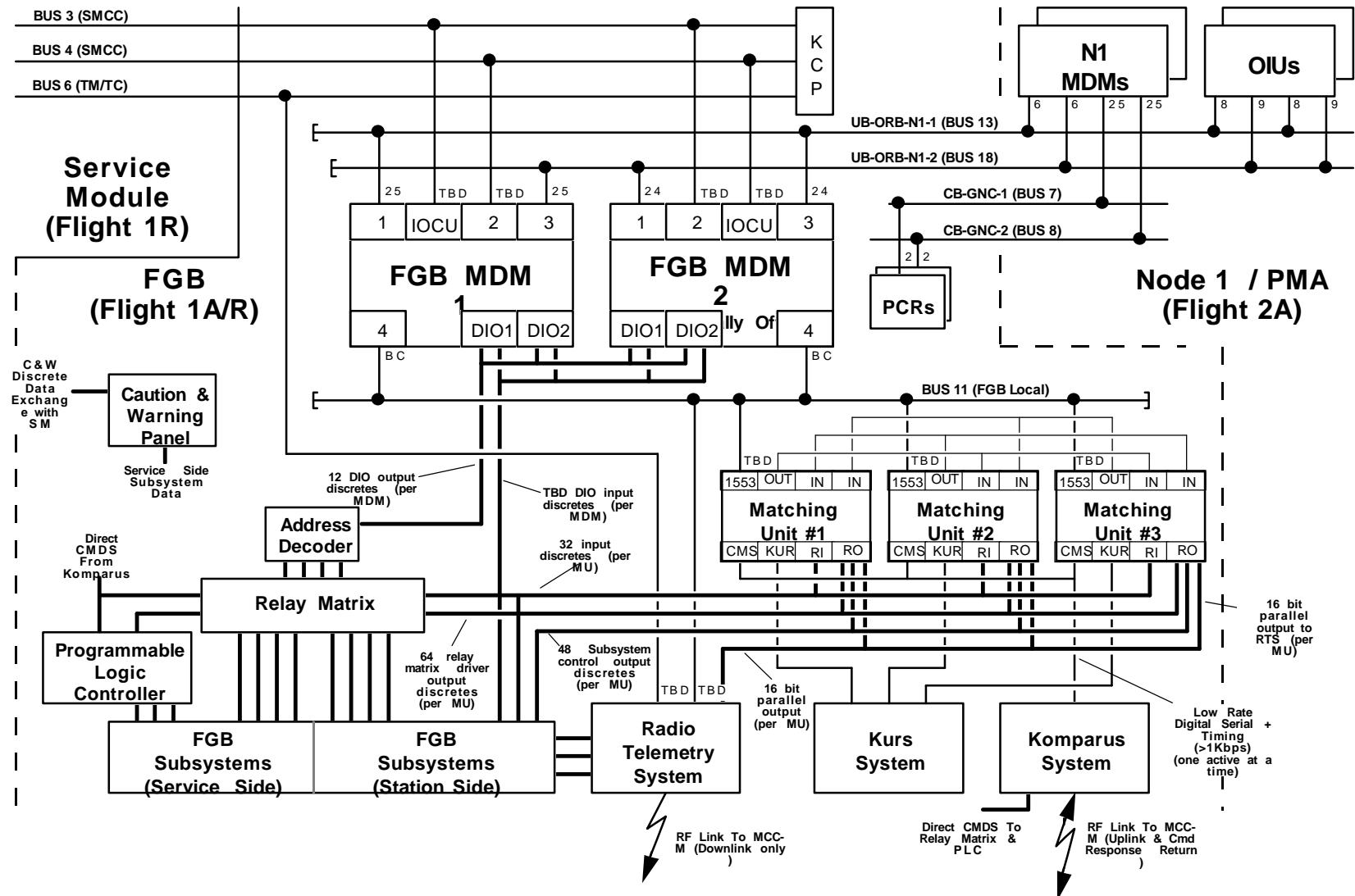


Figure 1.- FGB Computer System Hardware Block Diagram.

## **Input/Output Cards**

I/O Card	Typical Uses	Number of Channels
Low Level Analog (LLA)	Reads analog voltage or supplies the current source to measure the voltage drop across a Resistive Temperature Device. Mainly used for precise temperature measurements.	32
High Level Analog (HLA)	Reads analog sensors, such as pressure, flow rate, and speed, and supplies power for transducers.	32
Analog Input Output (AIO)	Drives analog effectors (fan speeds, valve speeds) and reads analog sensor voltage.	16
Digital Input Output (DIO)	Reads discrete sensors (valve/switch positions) and commands discrete effectors (valve/switch enable).	32
Solenoid Driver Output (SDO)	Activates and deactivates solenoids and valves. Drives effectors that require a separate power source but routed through MDM.	16

### N1-1 MDM Channel Assignments

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chanl No.	Chanl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
HX Lab LT-A Inl V Norm Fl Pos	Lab LT-A HX Inlet Byp Vlv Norm Flow Pos Ind	N1-1	A09	DIO	SL02	CH00	A	Lab	ECLSS	5A	12A
HX Lab LT-A Inl V Byp Fl Pos	Lab LT-A HX Inlet Byp Vlv Byp Flow Pos	N1-1	A09	DIO	SL02	CH01	A	Lab	ECLSS	5A	12A
HX Lab LT-A Out V Open Pos	Lab LT-A HX Outlet Isn/Rlf Vlv Open Pos Ind	N1-1	A09	DIO	SL02	CH02	B	Lab	ECLSS	5A	12A
HX Lab LT-A Out V Cls Pos	Lab LT-A HX Outlet Isn/Rlf Vlv Cls Pos Ind	N1-1	A09	DIO	SL02	CH03	B	Lab		5A	12A
Smk Det N1-1 Bit Enbl	Node-1 Smk Det-1 Bit Enbl	N1-1	A09	DIO	SL02	CH04	B	Node-1		2A	AC
VAV Dmpr N1-N1 EnableCmd	Node-1 Air Mix Vlv Enable Cmd	N1-1	A09	DIO	SL02	CH05	A	Node-1	ECLSS	2A	AC
IMV Fan N1-Aft Rtn On/Off Cmd	Node-1 Aft IMV Fan On/Off Cmd	N1-1	A09	DIO	SL02	CH06	A	Node-1	ECLSS	2A	AC
Cab Vent Fan N1 On/Off Cmd	Node-1 Cabin Fan On/Off Cmd	N1-1	A09	DIO	SL02	CH07	A	Node-1	ECLSS	2A	AC
TWV N1-1 Pos A	Node-1 3-Way SDS Vlv-1 Pos A	N1-1	A09	DIO	SL02	CH08	A	Node-1	?	2A	AC
TWV N1-1 Pos B	Node-1 3-Way SDS Vlv-1 Pos B	N1-1	A09	DIO	SL02	CH09	A	Node-1	?	2A	AC
TWV N1-2 Pos A	Node-1 3-Way SDS Vlv-2 PosA	N1-1	A09	DIO	SL02	CH10	B	Node-1	?	2A	AC
TWV N1-2 Pos B	Node-1 3-Way SDS Vlv-2 Pos B	N1-1	A09	DIO	SL02	CH11	B	Node-1	?	2A	AC
TWV N1-3 Pos A	Node-1 3-Way SDS Vlv-3 Pos A	N1-1	A09	DIO	SL02	CH12	B	Node-1	?	2A	AC
TWV N1-3 Pos B	Node-1 3-Way SDS Vlv-3 Pos B	N1-1	A09	DIO	SL02	CH13	A	Node-1	?	2A	AC
TWV N1-4 Pos A	Node-1 3-Way SDS Vlv-4 Pos A	N1-1	A09	DIO	SL02	CH14	A	Node-1	?	2A	AC
TWV N1-4 Pos B	Node-1 3-Way SDS Vlv-4 Pos B	N1-1	A09	DIO	SL02	CH15	A	Node-1	?	2A	AC
IMV V N1-Aft Rtn Cls Pos	Node-1 Aft Rtn IMV Vlv Cls Pos	N1-1	A09	DIO	SL02	CH16	A	Node-1	ECLSS	2A	AC
IMV V N1-Aft Rtn Enbl Cmd	Node-1 Aft Rtn IMV Vlv Enable Cmd	N1-1	A09	DIO	SL02	CH17	A	Node-1	ECLSS	2A	AC
IMV V N1-Aft Rtn Open Pos	Node-1 Aft Rtn IMV Vlv Open Pos	N1-1	A09	DIO	SL02	CH18	B	Node-1	ECLSS	2A	AC
IMV V N1-Aft Sply Open Pos	Node-1 Aft Sply IMV Vlv Open Pos	N1-1	A09	DIO	SL02	CH19	B	Node-1	ECLSS	2A	AC
IMV V N1-Aft Sply Cls Pos	Node-1 Aft Sply IMV Vlv Cls Pos	N1-1	A09	DIO	SL02	CH20	B	Node-1	ECLSS	2A	AC
IMV V N1-Aft Sply Enbl Cmd	Node-1 Aft Sply IMV Vlv Enable Cmd	N1-1	A09	DIO	SL02	CH21	A	Node-1	ECLSS	2A	AC
IMV V N1-Port Sply Open Pos	Node-1 Port Sply IMV Vlv Open Pos	N1-1	A09	DIO	SL02	CH22	A	Node-1	ECLSS	2A	AC
IMV V N1-Port Sply Cls Pos	Node-1 Port Sply IMV Vlv Cls Pos	N1-1	A09	DIO	SL02	CH23	A	Node-1	ECLSS	2A	AC
IMV V N1-Port Sply Enbl Cmd	Node-1 Port Sply IMV Vlv Enable Cmd	N1-1	A09	DIO	SL02	CH24	A	Node-1	ECLSS	2A	AC
IMV V N1-Stbd Rtn Enbl Cmd	Node-1 Stbd Rtn IMV Vlv Enable Cmd	N1-1	A09	DIO	SL02	CH25	A	Node-1	ECLSS	2A	AC
IMV V N1-Stbd Rtn Open Pos	Node-1 Stbd Rtn IMV Vlv Open Pos	N1-1	A09	DIO	SL02	CH26	B	Node-1	ECLSS	2A	AC
IMV V N1-Stbd Rtn Cls Pos	Node-1 Stbd Rtn IMV Vlv Cls Pos	N1-1	A09	DIO	SL02	CH27	B	Node-1	ECLSS	2A	AC
IMV V N1-Stbd Sply Open Pos	Node-1 Stbd Sply IMV Vlv Open Pos	N1-1	A09	DIO	SL02	CH28	B	Node-1	ECLSS	2A	AC
IMV V N1-Stbd Sply Cls Pos	Node-1 Stbd Sply IMV Vlv Cls Pos	N1-1	A09	DIO	SL02	CH29	A	Node-1	ECLSS	2A	AC
IMV V N1-Stbd Sply Enbl Cmd	Node-1 Stbd Sply IMV Vlv Enable Cmd	N1-1	A09	DIO	SL02	CH30	A	Node-1	ECLSS	2A	AC
SPARE	SPARE	N1-1	A09	DIO	SL02	CH31	SPARE	SPARE	SPARE		
SSMDM N1-2 Htr Pwr	MDM PMA1-2 Htr Pwr	N1-1	A05	SDO	SL03	CH00	n/a	PMA-1	TCS	2A	AC
HX Lab LT-A Inl V Norm Fl Cmd	Lab LT-A HX Inlet Byp Vlv Norm Flow Cmd	N1-1	A05	SDO	SL03	CH01	n/a	Lab	ECLSS	5A	12A
HX Lab LT-A Inl V Byp Fl Cmd	Lab LT-A HX Inlet Byp Vlv Byp Flow Cmd	N1-1	A05	SDO	SL03	CH02	n/a	Lab	ECLSS	5A	12A
HX Lab LT-A Out V Open Cmd	Lab LT-A HX Outlet Isn/Rlf Vlv Open Cmd	N1-1	A05	SDO	SL03	CH03	n/a	Lab	ECLSS	5A	12A
HX Lab LT-A Out V Cls Cmd	Lab LT-A HX Outlet Isn/Rlf Vlv Cls Cmd	N1-1	A05	SDO	SL03	CH04	n/a	Lab	ECLSS	5A	12A
TWV N1-1 Solenoid Cmd	Node-1 3-Way SDS Vlv-1 Solenoid Cmd	N1-1	A05	SDO	SL03	CH05	n/a	Node-1	?	2A	AC
TWV N1-1 Latch Cmd	Node-1 3-Way SDS Vlv-1 Latch Cmd	N1-1	A05	SDO	SL03	CH06	n/a	Node-1	?	2A	AC
TWV N1-2 Solenoid Cmd	Node-1 3-Way SDS Vlv-2 Solenoid Cmd	N1-1	A05	SDO	SL03	CH07	n/a	Node-1	?	2A	AC
TWV N1-2 Latch Cmd	Node-1 3-Way SDS Vlv-2 Latch Cmd	N1-1	A05	SDO	SL03	CH08	n/a	Node-1	?	2A	AC
TWV N1-3 Solenoid Cmd	Node-1 3-Way SDS Vlv-3 Solenoid Cmd	N1-1	A05	SDO	SL03	CH09	n/a	Node-1	?	2A	AC

**N1-1 MDM Channel Assignments**

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chnl No.	Chnl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
TWV N1-3 Latch Cmd	Node-1 3-Way SDS Vlv-3 Latch Cmd	N1-1	A05	SDO	SL03	CH10	n/a	Node-1	?	2A	AC
TWV N1-4 Solenoid Cmd	Node-1 3-Way SDS Vlv-4 Solenoid Cmd	N1-1	A05	SDO	SL03	CH11	n/a	Node-1	?	2A	AC
TWV N1-4 Latch Cmd	Node-1 3-Way SDS Vlv-4 Latch Cmd	N1-1	A05	SDO	SL03	CH12	n/a	Node-1	?	2A	AC
SPARE	SPARE	N1-1	A05	SDO	SL03	CH13	n/a	SPARE	SPARE		
SPARE	SPARE	N1-1	A05	SDO	SL03	CH14	n/a	SPARE	SPARE		
SPARE	SPARE	N1-1	A05	SDO	SL03	CH15	n/a	SPARE	SPARE		
SPARE	SPARE	N1-1	A05	SDO	SL03	CH16	n/a	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH00	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH01	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH02	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH03	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH04	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH05	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH06	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH07	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH08	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH09	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH10	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH11	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH12	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH13	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH14	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A10	DIO	SL04	CH15	SPARE	SPARE	SPARE		
Psiv APAS PMA2 Cap Plngr L-1 Pos	PMA-2 Passive APAS Capture Plunger Long-1 Pos	N1-1	A10	DIO	SL04	CH16	A	PMA-2	OSO	2A	5A
Psiv APAS PMA2 Cap Plngr S-1 Pos	PMA-2 Passive APAS Capture Plunger Short-1 Pos	N1-1	A10	DIO	SL04	CH17	A	PMA-2	OSO	2A	5A
Psiv APAS PMA2 Dep Plngr-1 Pos	PMA-2 Passive APAS Departure Plunger-1	N1-1	A10	DIO	SL04	CH18	B	PMA-2	OSO	2A	5A
Psiv APAS PMA2 Intf Sealed-1 Pos	PMA-2 Passive APAS Interface Sealed-1 Pos	N1-1	A10	DIO	SL04	CH19	B	PMA-2	OSO	2A	5A
SPARE	SPARE	N1-1	A10	DIO	SL04	CH20	SPARE	SPARE	SPARE		
GNC Moding Ind PMA2 Active ACS Ind Cmd-1	PMA-2 Talkback Panel Active ACS Ind Cmd-1	N1-1	A10	DIO	SL04	CH21	A	PMA-2	MCS	2A	5A
GNC Moding Ind PMA2 Free Drift Ind Cmd-1	PMA-2 Talkback Panel Free Drift Ind Cmd-1	N1-1	A10	DIO	SL04	CH22	A	PMA-2	MCS	2A	5A
Psiv APAS PMA3 Cap Plngr L-1 Pos	PMA-3 Passive APAS Capture Plunger Long-1 Pos	N1-1	A10	DIO	SL04	CH23	A	PMA-3	OSO	3A	16A
Psiv APAS PMA3 Cap Plngr S-1 Pos	PMA-3 Passive APAS Capture Plunger Short-1 Pos	N1-1	A10	DIO	SL04	CH24	A	PMA-3	OSO	3A	16A
Psiv APAS PMA3 Dep Plngr-1 Pos	PMA-3 Passive APAS Departure Plunger-1 Pos	N1-1	A10	DIO	SL04	CH25	A	PMA-3	OSO	3A	16A
Psiv APAS PMA3 Intf Sealed-1 Pos	PMA-3 Passive APAS Interface Sealed-1 Pos	N1-1	A10	DIO	SL04	CH26	B	PMA-3	OSO	3A	16A

**N1-1 MDM Channel Assignments**

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chanl No.	Chanl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
SPARE	SPARE	N1-1	A10	DIO	SL04	CH27	SPARE				
SPARE	SPARE	N1-1	A10	DIO	SL04	CH28	SPARE				
GNC Moding Ind PMA3 Active ACS Ind Cmd-1	PMA-3 Talkback Panel Active ACS Ind Cmd-1	N1-1	A10	DIO	SL04	CH29	A	PMA-3	MCS	2A	5A
GNC Moding Ind PMA3 Free Drift Ind Cmd-1	PMA-3 Talkback Panel Free Drift Ind Cmd-1	N1-1	A10	DIO	SL04	CH30	A	PMA-3	MCS	2A	5A
SPARE	SPARE	N1-1	A10	DIO	SL04	CH31	SPARE				
VAV Cont N1-N1 Exc	Node-1 Air Mix Rheostat Exc	N1-1	A04	LLA	SL05	CH00	A	Node-1	ECLSS	2A	AC
VAV Cont N1-N1 Pos	Node-1 Air Mix Rheostat Pos	N1-1	A04	LLA	SL05	CH01	B	Node-1	ECLSS	2A	AC
Smk Det N1-1 Scatter Meas	Node-1 Smk Det-1 Scatter Meas	N1-1	A04	LLA	SL05	CH02	B	Node-1	ECLSS	2A	AC
Smk Det N1-1 Obscuration Meas	Node-1 Smk Det-1 Obscuration Meas	N1-1	A04	LLA	SL05	CH03	A	Node-1	ECLSS	2A	AC
SPARE	SPARE	N1-1	A04	LLA	SL05	CH04	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH05	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH06	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH07	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH08	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH09	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH10	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH11	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH12	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH13	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH14	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH15	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH16	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH17	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH18	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH19	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH20	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH21	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH22	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH23	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH24	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH25	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH26	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH27	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH28	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH29	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH30	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A04	LLA	SL05	CH31	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	All	AIO	SL06	CH00	SPARE	SPARE	SPARE		

### N1-1 MDM Channel Assignments

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chanl No.	Chanl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
SPARE	SPARE	N1-1	All	AIO	SL06	CH01	SPARE	SPARE	SPARE		
VAV Dmpr N1-N1 Pos Cmd	Node-1 Air Mix Vlv Pos Cmd	N1-1	All	AIO	SL06	CH02	B	Node-1	ECLSS	2A	AC
Cab Vent Fan N1 Speed Cmd	Node-1 Cabin Fan Speed Cmd	N1-1	All	AIO	SL06	CH03	A	Node-1	ECLSS	2A	AC
IMV V N1-Aft Rtn Speed Cmd	Node-1 Aft Rtn IMV Vlv Speed Cmd	N1-1	All	AIO	SL06	CH04	B	Node-1	ECLSS	2A	AC
IMV V N1-Aft Sply Speed Cmd	Node-1 Aft Sply IMV Vlv Speed Cmd	N1-1	All	AIO	SL06	CH05	A	Node-1	ECLSS	2A	AC
IMV V N1-Port Sply Speed Cmd	Node-1 Port Sply IMV Vlv Speed Cmd	N1-1	All	AIO	SL06	CH06	A	Node-1	ECLSS	2A	AC
IMV V N1-Stbd Rtn Speed Cmd	Node-1 Stbd Rtn IMV Vlv Speed Cmd	N1-1	All	AIO	SL06	CH07	B	Node-1	ECLSS	2A	AC
IMV V N1-Stbd Sply Speed Cmd	Node-1 Stbd Sply IMV Vlv Speed Cmd	N1-1	All	AIO	SL06	CH08	B	Node-1	ECLSS	2A	AC
SPARE	SPARE	N1-1	All	AIO	SL06	CH09	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	All	AIO	SL06	CH10	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	All	AIO	SL06	CH11	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	All	AIO	SL06	CH12	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	All	AIO	SL06	CH13	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	All	AIO	SL06	CH14	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	All	AIO	SL06	CH15	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	All	AIO	SL06	CH16	SPARE	SPARE	SPARE		
HX Lab LT-A Out RTD Meas	Lab LT-A HX Outlet RTD Meas	N1-1	A03	LLA	SL07	CH00	A	Lab	TCS	5A	12A
Pri Struct N1 RTD Zone 1-1 Meas	Node-1 Shell Zone-1 RTD-1 Meas	N1-1	A03	LLA	SL07	CH01	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 1-3 Meas	Node-1 Shell Zone-1 RTD-3 Meas	N1-1	A03	LLA	SL07	CH02	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 2-1 Meas	Node-1 Shell Zone-2 RTD-1 Meas	N1-1	A03	LLA	SL07	CH03	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 3-1 Meas	Node-1 Shell Zone-3 RTD-1 Meas	N1-1	A03	LLA	SL07	CH04	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 3-3 Meas	Node-1 Shell Zone-3 RTD-3 Meas	N1-1	A03	LLA	SL07	CH05	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 4-1 Meas	Node-1 Shell Zone-4 RTD-1 Meas	N1-1	A03	LLA	SL07	CH06	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 5-1 Meas	Node-1 Shell Zone-5 RTD-1 Meas	N1-1	A03	LLA	SL07	CH07	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 5-3 Meas	Node-1 Shell Zone-5 RTD-3 Meas	N1-1	A03	LLA	SL07	CH08	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 6-1 Meas	Node-1 Shell Zone-6 RTD-1 Meas	N1-1	A03	LLA	SL07	CH09	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 6-3 Meas	Node-1 Shell Zone-6 RTD-3 Meas	N1-1	A03	LLA	SL07	CH10	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 7-1 Meas	Node-1 Shell Zone-7 RTD-1 Meas	N1-1	A03	LLA	SL07	CH11	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 7-3 Meas	Node-1 Shell Zone-7 RTD-3 Meas	N1-1	A03	LLA	SL07	CH12	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 8-1 Meas	Node-1 Shell Zone-8 RTD-1 Meas	N1-1	A03	LLA	SL07	CH13	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 9-1 Meas	Node-1 Shell Zone-9 RTD-1 Meas	N1-1	A03	LLA	SL07	CH14	B	Node-1	TCS	2A	AC
SPARE	SPARE	N1-1	A03	LLA	SL07	CH15	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A03	LLA	SL07	CH16	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A03	LLA	SL07	CH17	SPARE	SPARE	SPARE		
Pri Struct N2 RTD Zone 1-1 Meas	Node-2 Shell Zone-1 RTD-1 Meas	N1-1	A03	LLA	SL07	CH18	A	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 2-1 Meas	Node-2 Shell Zone-1 RTD-3 Meas	N1-1	A03	LLA	SL07	CH19	B	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 9-1 Meas	Node-2 Shell Zone-2 RTD-1 Meas	N1-1	A03	LLA	SL07	CH20	A	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 3-2 Meas	Node-2 Shell Zone-3 RTD-1 Meas	N1-1	A03	LLA	SL07	CH21	B	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 5-1 Meas	Node-2 Shell Zone-3 RTD-3 Meas	N1-1	A03	LLA	SL07	CH22	B	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 6-1 Meas	Node-2 Shell Zone-4 RTD-1 Meas	N1-1	A03	LLA	SL07	CH23	A	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 7-1 Meas	Node-2 Shell Zone-5 RTD-1 Meas	N1-1	A03	LLA	SL07	CH24	A	Node-2	TCS	10A	10A

### N1-1 MDM Channel Assignments

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chanl No.	Chanl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
Pri Struct N2 RTD Zone 1-3 Meas	Node-2 Shell Zone-5 RTD-3 Meas	N1-1	A03	LLA	SL07	CH25	B	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 2-2 Meas	Node-2 Shell Zone-6 RTD-1 Meas	N1-1	A03	LLA	SL07	CH26	B	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 9-2 Meas	Node-2 Shell Zone-6 RTD-3 Meas	N1-1	A03	LLA	SL07	CH27	A	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 3-4 Meas	Node-2 Shell Zone-7 RTD-1 Meas	N1-1	A03	LLA	SL07	CH28	B	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 5-3 Meas	Node-2 Shell Zone-7 RTD-3 Meas	N1-1	A03	LLA	SL07	CH29	A	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 6-3 Meas	Node-2 Shell Zone-8 RTD-1 Meas	N1-1	A03	LLA	SL07	CH30	A	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 7-3 Meas	Node-2 Shell Zone-9 RTD-1 Meas	N1-1	A03	LLA	SL07	CH31	B	Node-2	TCS	10A	10A
VAV Dmpr N1-N1 Pos Fdbk	Node-1 Air Mix Vlv Pos Fdbk	N1-1	A12	HLA	SL08	CH00	A	Node-1	ECLSS	2A	AC
IMV Fan N1-Aft Rtn Speed Fdbk	Node-1 Aft IMV Fan Speed Fdbk	N1-1	A12	HLA	SL08	CH01	B	Node-1	ECLSS	2A	AC
Cab Vent Fan N1 Speed Fdbk	Node-1 Cabin Fan Speed Fdbk	N1-1	A12	HLA	SL08	CH02	B	Node-1	ECLSS	2A	AC
Cab Vent Fan N1 Diff Press Xdcr Meas	Node-1 Cabin Fan Diff Press Xdcr Meas	N1-1	A12	HLA	SL08	CH03	A	Node-1	ECLSS	2A	AC
SPARE	SPARE	N1-1	A12	HLA	SL08	CH04	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH05	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH06	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH07	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH08	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH09	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH10	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH11	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH12	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH13	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH14	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH15	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH16	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH17	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH18	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH19	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH20	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH21	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH22	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH23	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH24	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH25	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH26	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH27	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH28	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH29	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH30	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A12	HLA	SL08	CH31	SPARE	SPARE	SPARE		
SSMDM N1-2 RTD Meas	MDM PMA1-2 RTD Meas	N1-1	A02	LLA	SL09	CH00	A	PMA-2	TCS	2A	AC

**N1-1 MDM Channel Assignments**

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chanl No.	Chanl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
Press Shl PMA1 RTD-1 Meas	PMA-1 Shell RTD-1 Meas	N1-1	A02	LLA	SL09	CH01	B	PMA-1	TCS	2A	AC
Press Shl PMA1 RTD-2 Meas	PMA-1 Shell RTD-2 Meas	N1-1	A02	LLA	SL09	CH02	B	PMA-1	TCS	2A	AC
Press Shl PMA1 RTD-3 Meas	PMA-1 Shell RTD-3 Meas	N1-1	A02	LLA	SL09	CH03	A	PMA-1	TCS	2A	AC
Press Shl PMA1 RTD 4 Meas	PMA-1 Shell RTD 4 Meas	N1-1	A02	LLA	SL09	CH04	B	PMA-1	TCS	2A	AC
Press Shl PMA1 RTD-5 Meas	PMA-1 Shell RTD-5 Meas	N1-1	A02	LLA	SL09	CH05	A	PMA-1	TCS	2A	AC
Psiv APAS PMA2 Htch RTD-1 Meas	PMA-2 APAS Hatch RTD-1 Meas	N1-1	A02	LLA	SL09	CH06	A	PMA-2	TCS	2A	5A
Psiv APAS PMA2 Htch RTD-2 Meas	PMA-2 APAS Hatch RTD-2 Meas	N1-1	A02	LLA	SL09	CH07	B	PMA-2	TCS	2A	5A
Psiv APAS PMA2 Htch RTD-3 Meas	PMA-2 APAS Hatch RTD-3 Meas	N1-1	A02	LLA	SL09	CH08	B	PMA-2	TCS	2A	5A
Psiv APAS PMA2 Htch RTD 4 Meas	PMA-2 APAS Hatch RTD 4 Meas	N1-1	A02	LLA	SL09	CH09	A	PMA-2	TCS	2A	5A
SPARE	SPARE	N1-1	A02	LLA	SL09	CH10	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH11	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH12	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH13	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH14	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH15	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH16	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH17	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH18	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH19	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH20	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH21	SPARE	SPARE	SPARE		
CMGEA-2 RTD-1 Meas	CMGEA-2 RTD-1 Meas	N1-1	A02	LLA	SL09	CH22	B	ITC-Z1	?	?	?
CMGEA-2 RTD-2 Meas	CMGEA-2 RTD-2 Meas	N1-1	A02	LLA	SL09	CH23	A	ITC-Z1	?	?	?
CMGEA-3 RTD-1 Meas	CMGEA-3 RTD-1 Meas	N1-1	A02	LLA	SL09	CH24	A	ITC-Z1	?	?	?
CMGEA-3 RTD-2 Meas	CMGEA-3 RTD-2 Meas	N1-1	A02	LLA	SL09	CH25	B	ITC-Z1	?	?	?
SPARE	SPARE	N1-1	A02	LLA	SL09	CH26	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH27	SPARE	SPARE	SPARE		
SPDA Z1-3B Util Rail RTD-1 Meas	SPDA Z1-3B Util Rail RTD-1 Meas	N1-1	A02	LLA	SL09	CH28	B	ITC-Z1	TCS	3A	AC
SPARE	SPARE	N1-1	A02	LLA	SL09	CH29	SPARE	SPARE	SPARE		
SPARE	SPARE	N1-1	A02	LLA	SL09	CH30	SPARE	SPARE	SPARE		
SPDA Z1-4B Util Rail RTD-2 Meas	SPDA Z1-4B Util Rail RTD-2 Meas	N1-1	A02	LLA	SL09	CH31	B	ITC-Z1	TCS	3A	AC

### N1-2 MDM Channel Assignments

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chanl No.	Chanl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
HX Lab MT-B IN1 V Norm F1 Pos	Lab MT-B HX Inlet Byp Vlv Norm Flow Pos Ind	N1-2	A09	DIO	SL02	CH00	A	LAB	TCS	5A	12A
HX Lab MT-B IN1 V Byp F1 Cmd	Lab MT-B HX Inlet Byp Vlv Byp Flow Pos Ind	N1-2	A09	DIO	SL02	CH01	A	LAB	TCS	5A	12A
HX Lab MT-B Out V Open Pos	Lab MT-B HX Outlet Isln/Rlf Vlv Open Pos Ind	N1-2	A09	DIO	SL02	CH02	B	LAB	TCS	5A	12A
HX Lab MT-B Out V Cls Pos	Lab MT-B HX Outlet Isln/Rlf Vlv Cls Pos Ind	N1-2	A09	DIO	SL02	CH03	B	LAB	TCS	5A	12A
Smk Det N2-1 Bit Enbl	Node-1 Smk Det-2 Bit Enbl	N1-2	A09	DIO	SL02	CH04	B	Node-1	TCS	2A	AC
VAV Dmpr N1-CU Enbl Cmd	Cupola Air Mix Vlv Enable Cmd	N1-2	A09	DIO	SL02	CH05	A	Node-1	ECLSS	2A	AC
IMV Fan N1-Port Sply On/Off Cmd	Node-1 Port IMV Fan On/Off Cmd	N1-2	A09	DIO	SL02	CH06	A	Node-1	ECLSS	2A	AC
IMV Fan N1-Stbd Rtn On/Off Cmd	Node-1 Stbd IMV Fan On/Off Cmd	N1-2	A09	DIO	SL02	CH07	A	Node-1	ECLSS	2A	AC
Spare	Spare	N1-2	A09	DIO	SL02	CH08	Spare	Spare	Spare		
Spare	Spare	N1-2	A09	DIO	SL02	CH09	Spare	Spare	Spare		
Spare	Spare	N1-2	A09	DIO	SL02	CH10	Spare	Spare	Spare		
Spare	Spare	N1-2	A09	DIO	SL02	CH11	Spare	Spare	Spare		
Spare	Spare	N1-2	A09	DIO	SL02	CH12	Spare	Spare	Spare		
Spare	Spare	N1-2	A09	DIO	SL02	CH13	Spare	Spare	Spare		
Spare	Spare	N1-2	A09	DIO	SL02	CH14	Spare	Spare	Spare		
Spare	Spare	N1-2	A09	DIO	SL02	CH15	Spare	Spare	Spare		
IMV V N1-Fwd Rtn Open Pos	Node-1 Fwd Rtn IMV Vlv Cls Pos	N1-2	A09	DIO	SL02	CH16	A	Node-1	ECLSS	2A	AC
IMV V N1-Fwd Rtn Enbl Cmd	Node-1 Fwd Rtn IMV Vlv Enbl Cmd	N1-2	A09	DIO	SL02	CH17	A	Node-1	ECLSS	2A	AC
IMV V N1-Fwd Rtn Cls Pos	Node-1 Fwd Rtn IMV Vlv Open Pos	N1-2	A09	DIO	SL02	CH18	B	Node-1	ECLSS	2A	AC
IMV V N1-Fwd Sply Open Pos	Node-1 Fwd Sply IMV Vlv Open Pos	N1-2	A09	DIO	SL02	CH19	B	Node-1	ECLSS	2A	AC
IMV V N1-Fwd Sply Cls Pos	Node-1 Fwd Sply IMV Vlv Cls Pos	N1-2	A09	DIO	SL02	CH20	B	Node-1	ECLSS	2A	AC
IMV V N1-Fwd Sply Enbl Cmd	Node-1 Fwd Sply IMV Vlv Enbl Cmd	N1-2	A09	DIO	SL02	CH21	A	Node-1	ECLSS	2A	AC
IMV V N1-Nad Rtn Open Pos	Node-1 Nad Rtn IMV Vlv open Pos	N1-2	A09	DIO	SL02	CH22	A	Node-1	ECLSS	2A	AC
IMV V N1-Nad Rtn Cls Pos	Node-1 Nad Rtn IMV Vlv Cls Pos	N1-2	A09	DIO	SL02	CH23	A	Node-1	ECLSS	2A	AC
IMV V N1-Nad Rtn Enbl Cmd	Node-1 Nad Rtn IMV Vlv Enbl Cmd	N1-2	A09	DIO	SL02	CH24	A	Node-1	ECLSS	2A	AC
IMV V N1-Nad Sply Enbl Cmd	Node-1 Nad Sply IMV Vlv Enbl Cmd	N1-2	A09	DIO	SL02	CH25	A	Node-1	ECLSS	2A	AC
IMV V N1-Nad Sply Open Pos	Node-1 Nad Sply IMV Vlv Open Pos	N1-2	A09	DIO	SL02	CH26	B	Node-1	ECLSS	2A	AC
IMV V N1-Nad Sply Cls Pos	Node-1 Nad Sply IMV Vlv Cls Pos	N1-2	A09	DIO	SL02	CH27	B	Node-1	ECLSS	2A	AC
Spare	Spare	N1-2	A09	DIO	SL02	CH28	Spare	Spare	ECLSS		
Spare	Spare	N1-2	A09	DIO	SL02	CH29	Spare	Spare	Spare		
Spare	Spare	N1-2	A09	DIO	SL02	CH30	Spare	Spare	Spare		
Spare	Spare	N1-2	A09	DIO	SL02	CH31	Spare	Spare	Spare		
SSMDM N1-1 Htr Pwr	MDM PMA1-1 Htr Pwr	N1-2	A05	SDO	SL03	CH00	n/a	PMA-1	TCS	2A	AC
HX Lab MT-B IN1 V Norm F1 Cmd	Lab MT-B HX Inlet Byp Vlv Norm Flow Cmd	N1-2	A05	SDO	SL03	CH01	n/a	LAB	TCS	5A	12A
HX Lab MT-B IN1 V Byp F1 Cmd	Lab MT-B HX Inlet Byp Vlv Byp Flow Cmd	N1-2	A05	SDO	SL03	CH02	n/a	LAB	TCS	5A	12A
HX Lab MT-B Out V Open Cmd	Lab MT-B HX Outlet Isln/Rlf Vlv Open Cmd	N1-2	A05	SDO	SL03	CH03	n/a	LAB	TCS	5A	12A
HX Lab MT-B Out V Cls Cmd	Lab MT-B HX Outlet Isln/Rlf Vlv Cls Cmd	N1-2	A05	SDO	SL03	CH04	n/a	LAB	TCS	5A	12A
Rnd Win Htr-1 Enbl Cmd	Cupola Rnd Window Htr-1 Enbl Cmd	N1-2	A05	SDO	SL03	CH05	n/a	Cupola	TCS	10A	AC
Rnd Win Htr-2 Enbl Cmd	Cupola Rnd Window Htr-2 Enbl Cmd	N1-2	A05	SDO	SL03	CH06	n/a	Cupola	TCS	10A	AC
Trap Win 1 Htr Enbl Cmd	Cupola Trap Window-1 Htr Enbl Cmd	N1-2	A05	SDO	SL03	CH07	n/a	Cupola	TCS	10A	AC
Trap Win 2 Htr Enbl Cmd	Cupola Trap Window-2 Htr Enbl Cmd	N1-2	A05	SDO	SL03	CH08	n/a	Cupola	TCS	10A	AC

**N1-2 MDM Channel Assignments**

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chanl No.	Chanl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
Trap Win 3 Htr Enbl Cmd	Cupola Trap Window-3 Htr Enbl Cmd	N1-2	A05	SDO	SL03	CH09	n/a	Cupola	TCS	10A	AC
Trap Win 4 Htr Enbl Cmd	Cupola Trap Window-4 Htr Enbl Cmd	N1-2	A05	SDO	SL03	CH10	n/a	Cupola	TCS	10A	AC
Trap Win 5 RTD-1 Meas	Cupola Trap Window-5 Htr Enbl Cmd	N1-2	A05	SDO	SL03	CH11	n/a	Cupola	TCS	10A	AC
Trap Win 6 RTD-1 Meas	Cupola Trap Window-6 Htr Enbl Cmd	N1-2	A05	SDO	SL03	CH12	n/a	Cupola	TCS	10A	AC
Spare	Spare	N1-2	A05	SDO	SL03	CH13	n/a	Spare	Spare		
Spare	Spare	N1-2	A05	SDO	SL03	CH14	n/a	Spare	Spare		
Spare	Spare	N1-2	A05	SDO	SL03	CH15	n/a	Spare	Spare		
Spare	Spare	N1-2	A05	SDO	SL03	CH16	n/a	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH00	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH01	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH02	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH03	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH04	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH05	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH06	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH07	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH08	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH09	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH10	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH11	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH12	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH13	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH14	Spare	Spare	Spare		
Spare	Spare	N1-2	A10	DIO	SL04	CH15	Spare	Spare	Spare		
Psiv APAS PMA2 Cap Plngr L-2 Pos	PMA-2 Passive APAS Capture Plunger Long-2 Pos	N1-2	A10	DIO	SL04	CH16	A	PMA-2	OSO	2A	5A
Psiv APAS PMA2 Cap Plngr S-2 Pos	PMA-2 Passive APAS Capture Plunger Short-2 Pos	N1-2	A10	DIO	SL04	CH17	A	PMA-2	OSO	2A	5A
Psiv APAS PMA2 Dep Plngr-2 Pos	PMA-2 Passive APAS Departure Plngr-2 Pos	N1-2	A10	DIO	SL04	CH18	B	PMA-2	OSO	2A	5A
Psiv APAS PMA2 Intf Sealed-2 Pos	PMA-2 Passive APAS Interface Sealed-2 Pos	N1-2	A10	DIO	SL04	CH19	B	PMA-2	OSO	2A	5A
Spare	Spare			DIO	SL04	CH20	Spare	Spare	Spare		
GNC Moding Ind PMA2 Active ACS Ind Cmd-2	PMA-2 Talkback Panel Active ACS Ind Cmd-2	N1-2	A10	DIO	SL04	CH21	A	PMA-2	MCS	2A	5A
GNC Moding Ind PMA2 Free Drift Ind	PMA-2 Talkback Panel Free Drift Ind Cmd-2	N1-2	A10	DIO	SL04	CH22	A	PMA-2	MCS	2A	5A
Psiv APAS PMA3 Cap Plngr L-2 Pos	PMA-3 Passive APAS Capture Plngr Long-2 Pos	N1-2	A10	DIO	SL04	CH23	A	PMA-3	OSO	3A	16A
Psiv APAS PMA3 Cap Plngr S-2 Pos	PMA-3 Passive APAS Capture Plngr Short-2 Pos	N1-2	A10	DIO	SL04	CH24	A	PMA-3	OSO	3A	16A
Psiv APAS PMA3 Dep Plngr-2 Pos	PMA-3 Passive APAS Departure Plngr-2 Pos	N1-2	A10	DIO	SL04	CH25	A	PMA-3	OSO	3A	16A
Psiv APAS PMA3 Intf Sealed-2 Pos	PMA-3 Passive APAS Interface Sealed-2 Pos	N1-2	A10	DIO	SL04	CH26	B	PMA-3	OSO	3A	16A
Spare	Spare	N1-2	A10	DIO	SL04	CH27	Spare	Spare	Spare		

### N1-2 MDM Channel Assignments

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chanl No.	Chanl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
Spare	Spare	N1-2	A10	DIO	SL04	CH28	Spare	Spare	Spare		
GNC Moding Ind PMA3 Active ACS Ind Cmd-2	PMA-3 Talkback Panel Active ACS Ind Cmd-2	N1-2	A10	DIO	SL04	CH29	A	PMA-3	MCS	3A	16A
GNC Moding Ind PMA3 Free Drift Ind Cmd-2	PMA-3 Talkback Panel Free Drift Ind Cmd-2	N1-2	A10	DIO	SL04	CH30	A	PMA-3	MCS	3A	16A
Spare	Spare	N1-2	A10	DIO	SL04	CH31	Spare	Spare	Spare		
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VAV Cont CU-CU Pos	CUPOLA Air Mix Rheostat Pos	N1-2	A04	LLA	SL05	CH00	A	Cupola	ECLSS	2A	AC
VAV Cont CU-CU Exc	CUPOLA Air Mix Rheostat Exc	N1-2	A04	LLA	SL05	CH01	B	Cupola	ECLSS	2A	AC
Smk Det N2-1 Scatter Meas	Node-1 Smk Det-2 Scatter Meas	N1-2	A04	LLA	SL05	CH02	B	Node-1	ECLSS	2A	AC
Smk Det N2-1 Obscuration Meas	Node-1 Smk Det-2 Obscuration Meas	N1-2	A04	LLA	SL05	CH03	A	Node-1	ECLSS	2A	AC
Rnd Win RTD-1 Meas	Cupola Rnd Window RTD-1A Meas	N1-2	A04	LLA	SL05	CH04	B	Cupola	TCS	10A	AC
Rnd Win RTD-3 Meas	Cupola Rnd Window RTD-2A Meas	N1-2	A04	LLA	SL05	CH05	A	Cupola	TCS	10A	AC
Trap Win 1 RTD-1 Meas	Cupola Trap Window-1 RTD-1 Meas	N1-2	A04	LLA	SL05	CH06	A	Cupola	TCS	10A	AC
Trap Win 1 RTD-3 Meas	Cupola Trap Window-1 RTD-3 Meas	N1-2	A04	LLA	SL05	CH07	B	Cupola	TCS	10A	AC
Trap Win 2 RTD-1 Meas	Cupola Trap Window-2 RTD-1 Meas	N1-2	A04	LLA	SL05	CH08	B	Cupola	TCS	10A	AC
Trap Win 2 RTD-3 Meas	Cupola Trap Window-2 RTD-3 Meas	N1-2	A04	LLA	SL05	CH09	A	Cupola	TCS	10A	AC
Trap Win 3 RTD-1 Meas	Cupola Trap Window-3 RTD-1 Meas	N1-2	A04	LLA	SL05	CH10	A	Cupola	TCS	10A	AC
Trap Win 3 RTD-3 Meas	Cupola Trap Window-3 RTD-3 Meas	N1-2	A04	LLA	SL05	CH11	B	Cupola	TCS	10A	AC
Trap Win 4 RTD-1 Meas	Cupola Trap Window-4 RTD-1 Meas	N1-2	A04	LLA	SL05	CH12	A	Cupola	TCS	10A	AC
Trap Win 4 RTD-3 Meas	Cupola Trap Window-4 RTD-3 Meas	N1-2	A04	LLA	SL05	CH13	B	Cupola	TCS	10A	AC
Trap Win 5 Htr Enbl Cmd	Cupola Trap Window-5 RTD-1 Meas	N1-2	A04	LLA	SL05	CH14	B	Cupola	TCS	10A	AC
Trap Win 5 RTD-3 Meas	Cupola Trap Window-5 RTD-3 Meas	N1-2	A04	LLA	SL05	CH15	A	Cupola	TCS	10A	AC
Trap Win 6 Htr Enbl Cmd	Cupola Trap Window-6 RTD-1 Meas	N1-2	A04	LLA	SL05	CH16	B	Cupola	TCS	10A	AC
Trap Win 6 RTD-3 Meas	Cupola Trap Window-6 RTD-3 Meas	N1-2	A04	LLA	SL05	CH17	A	Cupola	TCS	10A	AC
Rnd Win RTD-2 Meas	Cupola Rnd Window RTD-1B Meas	N1-2	A04	LLA	SL05	CH18	A	Cupola	TCS	10A	AC
Rnd Win RTD-4 Meas	Cupola Rnd Window RTD-2B Meas	N1-2	A04	LLA	SL05	CH19	B	Cupola	TCS	10A	AC
Trap Win 1 RTD-2 Meas	Cupola Trap Window-1 RTD-2 Meas	N1-2	A04	LLA	SL05	CH20	A	Cupola	TCS	10A	AC
Trap Win 1 RTD 4 Meas	Cupola Trap Window-1 RTD-4 Meas	N1-2	A04	LLA	SL05	CH21	B	Cupola	TCS	10A	AC
Trap Win 2 RTD-2 Meas	Cupola Trap Window-2 RTD-2 Meas	N1-2	A04	LLA	SL05	CH22	B	Cupola	TCS	10A	AC
Trap Win 2 RTD 4 Meas	Cupola Trap Window-2 RTD-4 Meas	N1-2	A04	LLA	SL05	CH23	A	Cupola	TCS	10A	AC
Trap Win 3 RTD-2 Meas	Cupola Trap Window-3 RTD-2 Meas	N1-2	A04	LLA	SL05	CH24	A	Cupola	TCS	10A	AC
Trap Win 3 RTD-4 Meas	Cupola Trap Window-3 RTD-4 Meas	N1-2	A04	LLA	SL05	CH25	B	Cupola	TCS	10A	AC
Trap Win 4 RTD-2 Meas	Cupola Trap Window-4 RTD-2 Meas	N1-2	A04	LLA	SL05	CH26	B	Cupola	TCS	10A	AC
Trap Win 4 RTD 4 Meas	Cupola Trap Window-4 RTD-4 Meas	N1-2	A04	LLA	SL05	CH27	A	Cupola	TCS	10A	AC
Trap Win 5 RTD-2 Meas	Cupola Trap Window-5 RTD-2 Meas	N1-2	A04	LLA	SL05	CH28	B	Cupola	TCS	10A	AC
Trap Win 5 RTD-4 Meas	Cupola Trap Window-5 RTD-4 Meas	N1-2	A04	LLA	SL05	CH29	A	Cupola	TCS	10A	AC
Trap Win 6 RTD-2 Meas	Cupola Trap Window-6 RTD-2 Meas	N1-2	A04	LLA	SL05	CH30	A	Cupola	TCS	10A	AC
Trap Win 6 RTD-4 Meas	Cupola Trap Window-6 RTD-4 Meas	N1-2	A04	LLA	SL05	CH31	B	Cupola	TCS	10A	AC
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Spare	Spare	N1-2	A11	AIO	SL06	CH00	Spare	Spare	Spare		
Spare	Spare	N1-2	A11	AIO	SL06	CH01	Spare	Spare	Spare		

**N1-2 MDM Channel Assignments**

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chnl No.	Chnl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
VAV Dmpr N1-CU Pos Cmd	Cupola Air Mix Vlv Pos Cmd	N1-2	A11	AIO	SL06	CH02	B	LS	TCS	2A	AC
Spare	Spare	N1-2	A11	AIO	SL06	CH03	Spare	Spare	Spare		
IMV V N1-Fwd Rtn Speed Cmd	Node-1 Fwd Rtn IMV Vlv Speed Cmd	N1-2	A11	AIO	SL06	CH04	B	Node-1	ECLSS	2A	AC
IMV V N1-Fwd Sply Speed Cmd	Node-1 Fwd Sply IMV Vlv Speed Cmd	N1-2	A11	AIO	SL06	CH05	A	Node-1	ECLSS	2A	AC
IMV V N1-Nad Rtn Speed Cmd	Node-1 Nad Rtn IMV Vlv Speed Cmd	N1-2	A11	AIO	SL06	CH06	A	Node-1	ECLSS	2A	AC
IMV V N1-Nad Sply Speed Cmd	Node-1 Nad Sply IMV Vlv Speed Cmd	N1-2	A11	AIO	SL06	CH07	B	Node-1	ECLSS	2A	AC
Spare	Spare	N1-2	A11	AIO	SL06	CH08	Spare	Spare	Spare		
Spare	Spare	N1-2	A11	AIO	SL06	CH09	Spare	Spare	Spare		
Spare	Spare	N1-2	A11	AIO	SL06	CH10	Spare	Spare	Spare		
Spare	Spare	N1-2	A11	AIO	SL06	CH11	Spare	Spare	Spare		
Spare	Spare	N1-2	A11	AIO	SL06	CH12	Spare	Spare	Spare		
Spare	Spare	N1-2	A11	AIO	SL06	CH13	Spare	Spare	Spare		
Spare	Spare	N1-2	A11	AIO	SL06	CH14	Spare	Spare	Spare		
Spare	Spare	N1-2	A11	AIO	SL06	CH15	Spare	Spare	Spare		
Spare	Spare	N1-2	A11	AIO	SL06	CH16	Spare	Spare	Spare		
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HX Lab MT-B Out Rtd Meas	Lab MT-B HX Outlet RTD Meas	N1-2	A03	LLA	SL07	CH00	A	LAB	TCS		
Pn Struct N1 RTD Zone 1-2 Meas	Node-1 Shell Zone-1 RTD-2 Meas	N1-2	A03	LLA	SL07	CH01	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 1-4 Meas	Node-1 Shell Zone-1 RTD-4 Meas	N1-2	A03	LLA	SL07	CH02	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 2-2 Meas	Node-1 Shell Zone-2 RTD-2 Meas	N1-2	A03	LLA	SL07	CH03	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 3-2 Meas	Node-1 Shell Zone-3 RTD-2 Meas	N1-2	A03	LLA	SL07	CH04	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 3-4 Meas	Node-1 Shell Zone-3 RTD-4 Meas	N1-2	A03	LLA	SL07	CH05	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 4-2 Meas	Node-1 Shell Zone 4 RTD-2 Meas	N1-2	A03	LLA	SL07	CH06	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 5-2 Meas	Node-1 Shell Zone-5 RTD-2 Meas	N1-2	A03	LLA	SL07	CH07	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 5-4 Meas	Node-1 Shell Zone-5 RTD-4 Meas	N1-2	A03	LLA	SL07	CH08	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 6-2 Meas	Node-1 Shell Zone-6 RTD-2 Meas	N1-2	A03	LLA	SL07	CH09	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 6-4 Meas	Node-1 Shell Zone-6 RTD-4 Meas	N1-2	A03	LLA	SL07	CH10	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 7-2 Meas	Node-1 Shell Zone-7 RTD-2 Meas	N1-2	A03	LLA	SL07	CH11	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 7-4 Meas	Node-1 Shell Zone-7 RTD-4 Meas	N1-2	A03	LLA	SL07	CH12	A	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 8-2 Meas	Node-1 Shell Zone-8 RTD-2 Meas	N1-2	A03	LLA	SL07	CH13	B	Node-1	TCS	2A	AC
Pri Struct N1 RTD Zone 9-2 Meas	Node-1 Shell Zone-9 RTD-2 Meas	N1-2	A03	LLA	SL07	CH14	B	Node-1	TCS	2A	AC
Spare	Spare	N1-2	A03	LLA	SL07	CH15	Spare	Spare	Spare		
Spare	Spare	N1-2	A03	LLA	SL07	CH16	Spare	Spare	Spare		
Spare	Spare	N1-2	A03	LLA	SL07	CH17	Spare	Spare	Spare		
Pri Struct N2 RTD Zone 1-2 Meas	Node-2 Shell Zone-1 RTD-2 Meas	N1-2	A03	LLA	SL07	CH18	A	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 8-1 Meas	Node-2 Shell Zone-1 RTD-4 Meas	N1-2	A03	LLA	SL07	CH19	B	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 3-1 Meas	Node-2 Shell Zone-2 RTD-2 Meas	N1-2	A03	LLA	SL07	CH20	A	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 4-1 Meas	Node-2 Shell Zone-3 RTD-2 Meas	N1-2	A03	LLA	SL07	CH21	B	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 5-2 Meas	Node-2 Shell Zone-3 RTD-4 Meas	N1-2	A03	LLA	SL07	CH22	B	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 6-2 Meas	Node-2 Shell Zone 4 RTD-2 Meas	N1-2	A03	LLA	SL07	CH23	A	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 7-2 Meas	Node-2 Shell Zone-5 RTD-2 Meas	N1-2	A03	LLA	SL07	CH24	A	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 1-4 Meas	Node-2 Shell Zone-5 RTD-4 Meas	N1-2	A03	LLA	SL07	CH25	B	Node-2	TCS	10A	10A

**N1-2 MDM Channel Assignments**

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chnl No.	Chnl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
Prl Struct N2 RTD Zone 8-2 Meas	Node-2 Shell Zone-6 RTD-2 Meas	N1-2	A03	LLA	SL07	CH26	B	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 3-3 Meas	Node-2 Shell Zone-6 RTD-4 Meas	N1-2	A03	LLA	SL07	CH27	A	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 4-2 Meas	Node-2 Shell Zone-7 RTD-2 Meas	N1-2	A03	LLA	SL07	CH28	B	Node-2	TCS	10A	10A
Pri Struct N2 RTD Zone 5-4 Meas	Node-2 Shell Zone-7 RTD-4 Meas	N1-2	A03	LLA	SL07	CH29	A	Node-2	TCS	10A	10A
Pn Struct N2 RTD Zone 6-4 Meas	Node-2 Shell Zone-8 RTD-2 Meas	N1-2	A03	LLA	SL07	CH30	A	Node-2	TCS	10A	10A
Pn Struct N2 RTD Zone 7-4 Meas	Node-2 Shell Zone-9 RTD-2 Meas	N1-2	A03	LLA	SL07	CH31	B	Node-2	TCS	10A	10A
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VAV Dmpr N1-CU Pos Fdbk	Cupola Air Mix Vlv Pos Fdbk	N1-2	A12	HLA	SL08	CH00	A	LS	ECLSS	2A	AC
IMV Fan N1-Port Sply Speed Cmd	Node-1 Port IMV Fan Speed Fdbk	N1-2	A12	HLA	SL08	CH01	B	Node-1	ECLSS	2A	AC
IMV Fan N1-Stbd Rtn Speed Cmd	Node-1 Stbd IMV Fan Speed Fdbk	N1-2	A12	HLA	SL08	CH02	B	Node-1	ECLSS	2A	AC
Abs Press Xdcr N1 Meas	Node-1 Cabin Press Xdcr Meas	N1-2	A12	HLA	SL08	CH03	A	Node-1	ECLSS	2A	AC
Spare	Spare	N1-2	A12	HLA	SL08	CH04	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH05	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH06	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH07	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH08	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH09	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH10	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH11	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH12	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH13	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH14	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH15	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH16	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH17	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH18	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH19	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH20	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH21	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH22	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH23	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH24	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH25	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH26	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH27	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH28	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH29	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH30	Spare	Spare	Spare		
Spare	Spare	N1-2	A12	HLA	SL08	CH31	Spare	Spare	Spare		
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SSMDM N1-1 RTD Meas	MDM PMA1-1 RTD Meas	N1-2	A02	LLA	SL09	CH00	A	PMA-I	TCS		
Press Shl PMA1 RTD-6 Meas	PMA-1 Shell RTD-6 Meas	N1-2	A02	LLA	SL09	CH01	B	PMA-I	TCS	2A	AC

**N1-2 MDM Channel Assignments**

Name	Description	MDM	Card Refdes	Card Type	Slot No.	Chnl No.	Chnl Type	ISS Element	OPS Position	Flight Activation	Flight Deactivation
Press Shl PMA1 RTD-7 Meas	PMA-1 Shell RTD-7 Meas	N1-2	A02	LLA	SL09	CH02	B	PMA-I	TCS	2A	AC
Press Shl PMA1 RTD-8 Meas	PMA-1 Shell RTD-8 Meas	N1-2	A02	LLA	SL09	CH03	A	PMA-I	TCS	2A	AC
Press Shl PMA1 RTD-9 Meas	PMA-1 Shell RTD-9 Meas	N1-2	A02	LLA	SL09	CH04	B	PMA-I	TCS		
Press Shl PMA1 RTD-10 Meas	PMA-1 Shell RTD-10 Meas	N1-2	A02	LLA	SL09	CH05	A	PMA-I	TCS	2A	AC
Psiv APAS PMA3 Htch RTD-1 Meas	PMA-3 APAS Hatch RTD-1 Meas	N1-2	A02	LLA	SL09	CH06	A	PMA-3	TCS	3A	16A
Psiv APAS PMA3 Htch RTD-2 Meas	PMA-3 APAS Hatch RTD-2 Meas	N1-2	A02	LLA	SL09	CH07	B	PMA-3	TCS	3A	16A
Psiv APAS PMA3 Htch RTD-3 Meas	PMA-3 APAS Hatch RTD-3 Meas	N1-2	A02	LLA	SL09	CH08	B	PMA-3	TCS	3A	16A
Psiv APAS PMA3 Htch RTD-4 Meas	PMA-3 APAS Hatch RTD-4 Meas	N1-2	A02	LLA	SL09	CH09	A	PMA-3	TCS	3A	16A
Press Shl PMA3 RTD-1 Meas	PMA-3 Shell RTD-1 Meas	N1-2	A02	LLA	SL09	CH10	A	PMA-3	TCS	3A	16A
Press Shl PMA3 RTD-2 Meas	PMA-3 Shell RTD-2 Meas	N1-2	A02	LLA	SL09	CH11	B	PMA-3	TCS	3A	16A
Press Shl PMA3 RTD-3 Meas	PMA-3 Shell RTD-3 Meas	N1-2	A02	LLA	SL09	CH12	A	PMA-3	TCS	3A	16A
Press Shl PMA3 RTD-4 Meas	PMA-3 Shell RTD-4 Meas	N1-2	A02	LLA	SL09	CH13	B	PMA-3	TCS	3A	16A
Press Shl PMA3 RTD-5 Meas	PMA-3 Shell RTD-5 Meas	N1-2	A02	LLA	SL09	CH14	B	PMA-3	TCS	3A	16A
Press Shl PMA3 RTD-6 Meas	PMA-3 Shell RTD-6 Meas	N1-2	A02	LLA	SL09	CH15	A	PMA-3	TCS	3A	16A
Press Shl PMA3 RTD-7 Meas	PMA-3 Shell RTD-7 Meas	N1-2	A02	LLA	SL09	CH16	B	PMA-3	TCS	3A	16A
Press Shl PMA3 RTD-8 Meas	PMA-3 Shell RTD-8 Meas	N1-2	A02	LLA	SL09	CH17	A	PMA-3	TCS	3A	16A
Press Shl PMA3 RTD-9 Meas	PMA-3 Shell RTD-9 Meas	N1-2	A02	LLA	SL09	CH18	A	PMA-3	TCS	3A	16A
Press Shl PMA3 RTD-10 Meas	PMA-3 Shell RTD-10 Meas	N1-2	A02	LLA	SL09	CH19	B	PMA-3	TCS	3A	16A
Spare	Spare	N1-2	A02	LLA	SL09	CH20	Spare	Spare	Spare		
Spare	Spare	N1-2	A02	LLA	SL09	CH21	Spare	Spare	Spare		
CMGEA-1 RTD-1 Meas	CMGEA-1 RTD-1 Meas	N1-2	A02	LLA	SL09	CH22	B	FGB	MCS		
CMGEA-1 RTD-2 Meas	CMGEA-1 RTD-2 Meas	N1-2	A02	LLA	SL09	CH23	A	ITS-Z1	MCS		
CMGEA-4 RTD-1 Meas	CMGEA-4 RTD-1 Meas	N1-2	A02	LLA	SL09	CH24	A	ITS-Z1	MCS		
CMGEA-4 RTD-2 Meas	CMGEA 4 RTD-2 Meas	N1-2	A02	LLA	SL09	CH25	B	ITS-Z1	MCS		
Spare	Spare	N1-2	A02	LLA	SL09	CH26		Spare	Spare		
Spare	Spare	N1-2	A02	LLA	SL09	CH27		Spare	Spare		
SPDA Z1-3B Util Rail RTD-2 Meas	SPDA Z1-3B Util Rail RTD-2 Meas	N1-2	A02	LLA	SL09	CH28	B	ITS-Z1	EPS		
Spare	Spare	N1-2	A02	LLA	SL09	CH29	Spare	Spare	Spare		
Spare	Spare	N1-2	A02	LLA	SL09	CH30	Spare	Spare	Spare		
SPDA Z1-4B Util Rail RTD-1 Meas	SPDA Z1-4B Util Rail RTD-1 Meas	N1-2	A02	LLA	SL09	CH31	B	ITS-Z1	EPS		

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
CDH	Prime NCS Detected RT Fail Prime CCS - Lab	C	LAB	Prim CCS	M1DP47MDX001U	155				Nominal	In Alarm		5A+
CDH	Prime NCS Detected RT Fail SMCC- 3 - SM	C	SM	SMCC 3	M1DP47MDX005U	159				Nominal	In Alarm		2A.1 +
CDH	Prime NCS Detected RT Fail SMCC- 2 - SM	C	SM	SMCC 2	M1DP47MDX007U	161				Nominal	In Alarm		2A.1 +
CDH	Prime NCS Detected RT Fail SMCC- 1 - SM	C	SM	SMCC 1	M1DP47MDX009U	163				Nominal	In Alarm		2A.1 +
CDH	Prime NCS Detected RT Fail MDM FGB-2 - FGB	C	FGB	FGB MDM 2	M1DP47MDX011U	165				Nominal	In Alarm		2A +
CDH	Prime NCS Detected RT Fail MDM FGB-1 - FGB	C	FGB	FGB MDM 1	M1DP47MDX013U	167				Nominal	In Alarm		2A +
CDH	Prime NCS Detected Busy Bit Fail for SMCC - SM	C	SM	SMCC	M1DP47MDX019U	246				Nominal	In Alarm		2A.1 +
CDH	Prime NCS Detected Frame Count Fail for SMCC - SM	C	SM	SMCC	M1DP47MDX020U	247				Nominal	In Alarm		2A.1 +
CDH	Prime NCS Loss of Sync to SMCC - SM	C	SM	SMCC	M1DP47MDX021U	248				Nominal	In Alarm		2A.1 +
CDH	Prime NCS Detected RT Fail OIU - Shuttle	C	N/A	OIU	M1DP47MDX111U	171				Nominal	In Alarm		2A +
CDH	MDM N1-1 Detected RT Fail MDM N1-2 - PMA 1	C	PMA1	NOD1 2 MDM	M1DS47MDX012U	7				Nominal	In Alarm		2A +
CDH	MDM N1-1 User Bus Orb N1-1 Fail - NOD1	C	PMA1	NOD1 1 MDM	M1DS47MDX014U	9				Nominal	In Alarm		2A +
CDH	MDM N1-2 Detected RT Fail MDM N1-1 - PMA 1	C	PMA1	NOD1 1 MDM	M1DS48MDX004U	67				Nominal	In Alarm		2A +
CDH	MDM N1-2 User Bus Orb N1-2 Fail - NOD1	C	PMA1	NOD1 2 MDM	M1DS48MDX014U	77				Nominal	In Alarm		2A +
CDH	MU Fail - FGB	C	SM	N/A	RFDC00MD1002J					Nominal	In Alarm		2A.1 +
CDH	BUS 3A Fail - SM	C	SM	N/A	RRDC00CT1221J					Nominal	In Alarm		2A.1 +
CDH	BUS 3B Fail - SM	C	SM	N/A	RRDC00CT1222J					Nominal	In Alarm		2A.1 +
CDH	BUS 4A Fail - SM	C	SM	N/A	RRDC00CT1223J					Nominal	In Alarm		2A.1 +
CDH	BUS 4B Fail - SM	C	SM	N/A	RRDC00CT1224J					Nominal	In Alarm		2A.1 +
CDH	TC Loss of Sync - SM	C	SM	N/A	RRDC00CT1225J					Nominal	In Alarm		2A.1 +
CDH	CPC1 Loss of Sync - SM	C	SM	N/A	RRDC00CT1226J					Nominal	In Alarm		2A.1 +
CDH	CPC2 Loss of Sync - SM	C	SM	N/A	RRDC00CT1227J					Nominal	In Alarm		2A.1 +
CDH	SM Loss of Sync to FGB MDM 1 - RS	C	SM	N/A	RRDC00CT1228J					Nominal	In Alarm		2A.1 +
CDH	SM Loss of Sync to FGB MDM 2 - RS	C	SM	N/A	RRDC00CT1229J					Nominal	In Alarm		2A.1 +
CDH	CC Loss of Redundancy - SM	C	SM	N/A	RRDC00CT1230J					Nominal	In Alarm		2A.1 +
CDH	TC Loss of Redundancy - SM	C	SM	N/A	RRDC00CT1231J					Nominal	In Alarm		2A.1 +
CDH	CPC1 Fail - SM	C	SM	N/A	RRDC00CT1232J					Nominal	In Alarm		2A.1 +
CDH	CPC2 Fail - SM	C	SM	N/A	RRDC00CT1233J					Nominal	In Alarm		2A.1 +
CDH	SM Detected FGB MDM 1 Fail - RS	C	SM	N/A	RRDC00CT1234J					Nominal	In Alarm		2A.1 +
CDH	SM Detected FGB MDM 2 Fail - RS	C	SM	N/A	RRDC00CT1235J					Nominal	In Alarm		2A.1 +
CDH	BUS 1A Fail - SM	C	SM	N/A	RRDT00TC1221J					Nominal	In Alarm		2A.1 +

## NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
CDH	BUS 1B Fail - SM	C	SM	N/A	RRDT00TC1222J					Nominal	In Alarm		2A.1 +
CDH	BUS 2A Fail - SM	C	SM	N/A	RRDT00TC1223J					Nominal	In Alarm		2A.1 +
CDH	BUS 2B Fail - SM	C	SM	N/A	RRDT00TC1224J					Nominal	In Alarm		2A.1 +
CDH	MU Loss of Sync -SM	C	SM	N/A	RRDT00TC1225J					Nominal	In Alarm		2A.1 +
CDH	MU1 Fail - SM	C	SM	N/A	RRDT00TC1226J					Nominal	In Alarm		2A.1 +
CDH	MU2 Fail - SM	C	SM	N/A	RRDT00TC1227J					Nominal	In Alarm		2A.1 +
CDH	MU3 Fail - SM	C	SM	N/A	RRDT00TC1228J					Nominal	In Alarm		2A.1 +
CDH	MU4 Fail - SM	C	SM	N/A	RRDT00TC1229J					Nominal	In Alarm		2A.1 +
CDH	MU5 Fail - SM	C	SM	N/A	RRDT00TC1230J					Nominal	In Alarm		2A.1 +
CDH	MU6 Fail - SM	C	SM	N/A	RRDT00TC1231J					Nominal	In Alarm		2A.1 +
CDH	Prime NCS Loss of Sync to Prime CCS - Lab	A	NOD1	MDM	M1DP47MDX000U					Nominal	In Alarm		5A+
CDH	Prime NCS Loss of Sync to Prime MDM INT - Lab	A	NOD1	MDM	M1DP47MDX002U					Nominal	In Alarm		5A+
CDH	Prime NCS Loss of Sync to MDM FGB-2 - FGB	A	FGB	FGB MDM 2	M1DP47MDX010U	164				Nominal	In Alarm		2A +
CDH	Prime NCS Loss of Sync to MDM FGB-1 - FGB	A	FGB	FGB MDM 1	M1DP47MDX012U	166				Nominal	In Alarm		2A +
CDH	Prime NCS User Bus EPS N1-23 Fail - NOD1	A	PMA1	Prim NCS	M1DP47MDX014U	168				Nominal	In Alarm		2A +
CDH	Prime NCS User Bus EPS N1-14 Fail - NOD1	A	PMA1	Prim NCS	M1DP47MDX015U	169				Nominal	In Alarm		2A +
CDH	Prime NCS Loss of Sync to SMCC - SM	A	SM	SMCC	M1DP47MDX016U	249				Nominal	In Alarm		2A.1 +
CDH	Prime NCS Detected Busy Bit Fail for SMCC - SM	A	SM	SMCC	M1DP47MDX017U	250				Nominal	In Alarm		2A.1 +
CDH	Prime NCS Detected Frame Count Fail for SMCC - SM	A	FGB	SMCC	M1DP47MDX018U	251				Nominal	In Alarm		2A.1 +
CDH	Prime NCS Loss of Sync to MDM PVCU-4B - P6	A	NOD1	MDM	M1DP47MDX114U					Nominal	In Alarm		4A +
CDH	Prime NCS Loss of Sync to MDM PVCU-2B - P6	A	NOD1	MDM	M1DP47MDX115U					Nominal	In Alarm		4A +
CDH	MDM N1-1 Loss of Sync to MDM N1-2 - PMA 1	A	PMA1	NOD1 2 MDM	M1DS47MDX011U	6				Nominal	In Alarm		2A +
CDH	MDM N1-1 Control Bus GNC 1 Fail - NOD1	A	PMA1	NOD1 1 MDM	M1DS47MDX013U	8				Nominal	In Alarm		2A +
CDH	MDM N1-1 Local Bus Sys Lab 1 Fail - NOD1	A	PMA1	NOD1 1 MDM	M1DS47MDX015U	10				Nominal	In Alarm		2A +
CDH	MDM N1-2 Operational Heater Failed - Node 1	A	PMA1	NOD1 1 MDM	M1DS47MDX301U	41				Nominal	< or = -45 deg F or > or = +120 deg F		2A +
CDH	MDM N1-2 Survival Heater Failed - Node 1	A	PMA1	NOD1 2 MDM	M1DS47MDX312U	52				Nominal	< or = -45 deg F or > or = +120 deg F		2A +
CDH	MDM N1-2 Loss of Sync to MDM N1-1 - PMA 1	A	PMA1	NOD1 1 MDM	M1DS48MDX003U	66				Nominal	In Alarm		2A +

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
CDH	MDM N1-2 Control Bus GNC 2 Fail - NOD1	A	PMA1	NOD1 2 MDM	M1DS48MDX013U	76				Nominal	In Alarm		2A +
CDH	MDM N1-2 Local Bus Sys Lab 2 Fail - NOD1	A	PMA1	NOD1 2 MDM	M1DS48MDX015U	78				Nominal	In Alarm		2A +
CDH	MDM N1-1 Operational Heater Failed - NODE 1	A	PMA1	NOD1 2 MDM	M1DS48MDX303U	119				Nominal	< or = -45 deg F or > or = +120 deg F		2A +
CDH	MDM N1-1 Survival Heater Failed - Node 1	A	PMA1	NOD1 1 MDM	M1DS48MDX408U	132				Nominal	< or = -45 deg F or > or = +120 deg F		2A +
CDH	UB_PVB-24-2_BUS FAILED	A	TBD	@	P6DP34MD2002J					Nominal	Failed		4A +
CDH	UB_PVB-24-1_BUS FAILED	A	TBD	@	P6DP34MD2003J					Nominal	Failed		4A +
CDH	TLM System Off - FGB	A	FGB	@	RFCC00MD0500J	257				Nominal	Failed		2A +
CNT	S-Band XPDR 2 RT Fail - Z1	C	Z1	XPDR	M1DS48MDX010U								
CNT	S-Band RFG 2 RT Fail - P6	C	P6	ACRFG	M1DS48MDX011U								
CNT	S-Band BSP 2 RT Fail - Z1	C	Z1	ACBSP	M1DS48MDX012U								
CNT	FGB KURS P1, P2 Failure	C	SM	N/A	RRCC00CT0002J								
CNT	Lost Comm to SM KURS-P1 - SM MCS	A	SM	N/A	RRCC00CT1111J								
CNT	No Measurements of KURS-P1,P,Vp	A	SM	N/A	RRCC00CT1112J								
CNT	Complete KURS-P1 Failure on SM Software Data	A	SM	N/A	RRCC00CT1113J								
CNT	Complete KURS-P1 Failure on SM Hardware Data	A	SM	N/A	RRCC00CT1114J								
CNT	No Exchange with SM KURS-P2	A	SM	N/A	RRCC00CT1115J								
CNT	No Measurements of KURS-P2,P,Vp	A	SM	N/A	RRCC00CT1116J								
CNT	SM KURS-P2 Software Data Failure - SM MCS	A	SM	N/A	RRCC00CT1117J								
CNT	SM KURS-P2 Hardware Data Failure - SM MCS	A	SM	N/A	RRCC00CT1118J								
CNT	Lost Comm to FGB KURS-P1 - SM MCS	A	SM	N/A	RRCC00CT1119J								
CNT	No Range or Rate Data from FGB KURS-P1 - SM MCS	A	SM	N/A	RRCC00CT1120J								
CNT	FGB KURS-P1 Software Data Failure - SM MCS	A	SM	N/A	RRCC00CT1121J								
CNT	FGB KURS-P1 Hardware Data Failure - SM MCS	A	SM	N/A	RRCC00CT1122J								
CNT	Lost Comm to FGB KURS-P2 - SM MCS	A	SM	N/A	RRCC00CT1123J								
CNT	No Range or Rate Data from FGB KURS-P2 - SM MCS	A	SM	N/A	RRCC00CT1124J								
CNT	FGB KURS-P2 Software Data Failure - SM MCS	A	SM	N/A	RRCC00CT1125J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
CNT	FGB KURS-P2 Hardware Data Failure - SM MCS	A	SM	N/A	RRCC00CT1126J								
CNT	No BITS Power	A	SM	N/A	RRCT00TC1151J								
CNT	Chan_A : Direct Transmission Mode Failure	A	SM	N/A	RRCT00TC1152J								
CNT	Chan_A : Transmission via REGUL Mode Failure	A	SM	N/A	RRCT00TC1153J								
CNT	Chan_A : Transmission via LIRA Mode Failure	A	SM	N/A	RRCT00TC1154J								
CNT	Storage Device_A : Record Mode Failure	A	SM	N/A	RRCT00TC1155J								
CNT	Storage Device_A : Direct Playback Mode Failure	A	SM	N/A	RRCT00TC1156J								
CNT	Storage Device_A : Reverse Playback Mode Failure	A	SM	N/A	RRCT00TC1157J								
CNT	Storage Device_A : Initial Mode Failure	A	SM	N/A	RRCT00TC1158J								
CNT	Chan_B : Direct Transmission Mode Failure	A	SM	N/A	RRCT00TC1159J								
CNT	Chan_B : Transmission via REGUL Mode Failure	A	SM	N/A	RRCT00TC1160J								
CNT	Chan_B : Transmission via LIRA Mode Failure	A	SM	N/A	RRCT00TC1161J								
CNT	Storage Device_B : Record Mode Failure	A	SM	N/A	RRCT00TC1162J								
CNT	Storage Device_B : Direct Playback Mode Failure	A	SM	N/A	RRCT00TC1163J								
CNT	Storage Device_B : Reverse Playback Mode Failure	A	SM	N/A	RRCT00TC1164J								
CNT	Storage Device_B : Initial Mode Failure	A	SM	N/A	RRCT00TC1165J								
CNT	Chan_A : Main On-Board Transmitter Failure	A	SM	@	RRCT00TC1166J								
CNT	Chan_A : Backup On-Board Transmitter Failure	A	SM	N/A	RRCT00TC1167J								
CNT	Chan_A : Main Storage Device Failure	A	SM	N/A	RRCT00TC1168J								
CNT	Chan_A : Backup Storage Device Failure	A	SM	N/A	RRCT00TC1169J								
CNT	Chan_B : Main On-Board Transmitter Failure	A	SM	N/A	RRCT00TC1170J								
CNT	Chan_B : Backup On-Board Transmitter Failure	A	SM	N/A	RRCT00TC1171J								
CNT	Chan_B : Main Storage Device Failure	A	SM	N/A	RRCT00TC1172J								
CNT	Chan_B : Backup Storage Device Failure	A	SM	N/A	RRCT00TC1173J								
CNT	LIRA is not Ready	A	SM	N/A	RRCT00TC1351J								

## NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
ECL	Cabin Fan Fail - NOD1	W	NOD1	NOD1_Cab_Fan	M1DS47MDX209U	34		< 3200 rpm (3X @ 1 Hz)	>7000 rpm (3X @ 1 Hz)	N/A	N/A		2A +
ECL	Cabin Press Hi - NOD1	W	NOD1	NOD1_Cab_Press_Snsr	M1DS48MDX208U	103		N/A	15.2 psia (3X @ 1 Hz)	N/A	N/A		2A +
ECL	Cabin Press Low - NOD1	W	NOD1	NOD1_Cab_Press_Snsr	M1DS48MDX209U	104		13.9 psia (3X @ 1 Hz)	N/A	N/A	N/A		2A +
ECL	Cabin Press Low - FGB	W	FGB	FGB_Press_Snsr	RFEC00MD0007J	239		TBD	N/A	N/A	N/A		2A +
ECL	Cabin Press Hi - FGB	W	FGB	FGB_Press_Snsr	RFEC00MD0008J	240		N/A	TBD	N/A	N/A		2A +
ECL	FIRE - Smoke Detector Level 1 - FGB	W	FGB	FGB_SD	RFEC00MD0031J	255		N/A	N/A	All FGB SD have Level 1 = blank (normal)	1+ FGB SD have Level 1 = X (In Alarm)		2A +
ECL	Elektron ST-64 Power Off - SM	W	SM	TBD	RRDT00TC0019J								
ECL	TBD	W	SM	TBD	RRDT00TC0020J								
ECL	TBD	W	SM	TBD	RRDT00TC0021J								
ECL	TBD	W	SM	TBD	RRDT00TC0022J								
ECL	Transfer Module - Docking Unit -X PEV Power Off - SM	W	SM	TBD	RRDT00TC0047J								
ECL	Work Module - Transfer Module PEV Power Off - SM	W	SM	TBD	RRDT00TC0048J								
ECL	Work Module - Transfer Chamber PEV Power Off - SM	W	SM	TBD	RRDT00TC0049J								
ECL	Transfer Chamber - Docking Unit +X PEV Power Off - SM	W	SM	TBD	RRDT00TC0050J								
ECL	Cabin Press Hi - SM	W	SM	TBD	RREC00CT0011J								
ECL	SMOKE - Level 1 - FGB	W	FGB	TBD	RREC00CT0012J								
ECL	SMOKE - Level 1 - SM	W	SM	TBD	RRET00TC0011J								
ECL	ppCO2 Hi - SM	W	SM	TBD	RRET00TC0012J								
ECL	Cabin Press Low - SM	W	SM	TBD	RRET00TC0013J								
ECL	ppO2 Low - SM	W	SM	TBD	RRET00TC0014J								
ECL	ppO2 Hi - SM	W	SM	TBD	RRET00TC0015J								
ECL	ppCO Hi - SM	W	SM	TBD	RRET00TC0016J								
ECL	ppH2 Hi - SM	W	SM	TBD	RRET00TC0017J								
ECL	Instr Compartment Press Low - Progress	W	SM	TBD	RRET00TC0018J								
ECL	FIRE - Smoke Detector 1 - NOD1	F	NOD1	NOD1_SD_1	M1DS47MDX210U	35	Node 1 SD 1 Sctr > Sctr Threshold 3X @ 1 Hz, with 3 second Active BIT between second and third measurements. Sctr Threshold = (Sctr Trip) * ((Obs+4.0v)/8.0v)	N/A	N/A	N/A	N/A		2A +

## NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
ECL	Fire - Smoke Detector 2 - NOD1	F	NOD1	NOD1_SD_2	M1DS48MDX210U	105	Node 1 SD 2 Sctr > Sctr Threshold 3X @ 1 Hz, with 3 second Active BIT between second and third measurements. Sctr Threshold = (Sctr Trip) * ((Obs+4.0v)/8.0v)	N/A	N/A	N/A	N/A		2A +
ECL	FIRE - Smoke Detector Level 2 - FGB	F	FGB	FGB_SD	RFEC00MD0001J	241		N/A	N/A	0 or 1 FGB SD have Level 2 = X (In Alarm)	2+ FGB SD have Level 2 = X (In Alarm)		2A +
ECL	FIRE - Level 2 - FGB	E	FGB	TBD	RREC00CT0001J								
ECL	RAPID DEPRESS - SM	E	SM	TBD	RREC00CT0002J								
ECL	RAPID DEPRESS - FGB	E	FGB	TBD	RREC00CT0003J								
ECL	FIRE - Level 2 - SM	E	SM	TBD	RRET00TC0001J								
ECL	TOXIC ATM - SM	E	SM	TBD	RRET00TC0002J								
ECL	IMV Aft Port Fan Fail Low - NOD1	C	NOD1	NOD1_Aft_Port_IMV_Fan	M1DS47MDX201U	27		<7462 rpm (3X)	N/A	N/A	N/A		2A +
ECL	IMV Aft Port Fan Fail Hi - NOD1	C	NOD1	NOD1_Aft_Port_IMV_Fan	M1DS47MDX202U	28		N/A	>9500 rpm (3X)	N/A	N/A		2A +
ECL	IMV Aft Port Vlv Fail - NOD1	C	NOD1	NOD1_Aft_Port_IMV_Vlv	M1DS47MDX203U	29		N/A	N/A	N/A	N/A		2A +
ECL	IMV Aft Stbd Vlv Fail - NOD1	C	NOD1	NOD1_Aft_Stbd_IMV_Vlv	M1DS47MDX204U	30		N/A	N/A	N/A	N/A		2A +
ECL	IMV Port Fwd Vlv Fail - NOD1	C	NOD1	NOD1_Port_Fwd_IMV_Vlv	M1DS47MDX205U	31		N/A	N/A	N/A	N/A		2A +
ECL	IMV Stbd Aft Vlv Fail - NOD1	C	NOD1	NOD1_Stbd_Aft_IMV_Vlv	M1DS47MDX206U	32		N/A	N/A	N/A	N/A		2A +
ECL	IMV Stbd Fwd Vlv Fail - NOD1	C	NOD1	NOD1_Stbd_Fwd_IMV_Vlv	M1DS47MDX207U	33		N/A	N/A	N/A	N/A		2A +
ECL	Smoke Detector 1 Active BIT Fail - NOD1	C	NOD1	NOD1_SD_1	M1DS47MDX211U	36	SD 1 Active BIT in Progress and one of the following: Sctr > 6.89 % obsr/mtr or Sctr < 2.95 % obsr/mtr during LED phase, Sctr > 0.82 % obsr/mtr or Sctr < -0.328 % obsr/mtr during QUIET phase, or Obsc > 97.5% contam in either phase.	N/A	N/A	N/A	N/A		2A +
ECL	Smoke Detector 1 Fail - NOD1	C	NOD1	NOD1_SD_1	M1DS47MDX212U	37	SD 1 Sctr < -0.328 % obsr/mtr or SD obsr > 50% contam or SD obsr < -2.5 % contam (2X for each event)	N/A	N/A	N/A	N/A		2A +

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity	
ECL	Smoke Detector 1 Lens Contamination - NOD1	C	NOD1	NOD1_SD_1	M1DS47MDX213U	38		N/A	N/A	N/A	N/A		2A +	
ECL	RAMV Fail - NOD1	C	NOD1	NOD1_RAMV	M1DS47MDX215U	40		N/A	N/A	N/A	N/A		2A +	
ECL	IMV Port Fwd Fan Fail Low - NOD1	C	NOD1	NOD1_Port_Fwd_IMV_Fan	M1DS48MDX200U	95		<7462 rpm (3X)	N/A	N/A	N/A		2A +	
ECL	IMV Port Fwd Fan Fail Hi - NOD1	C	NOD1	NOD1_Port_Fwd_IMV_Fan	M1DS48MDX201U	96		N/A	>9500 rpm (3X)	N/A	N/A		2A +	
ECL	IMV Stbd Aft Fan Fail Low - NOD1	C	NOD1	NOD1_Stbd_Aft_IMV_Fan	M1DS48MDX202U	97		<7462 rpm (3X)	N/A	N/A	N/A		2A +	
ECL	IMV Stbd Aft Fan Fail Hi - NOD1	C	NOD1	NOD1_Stbd_Aft_IMV_Fan	M1DS48MDX203U	98		N/A	>9500 rpm (3X)	N/A	N/A		2A +	
ECL	IMV Deck Fwd Vlv Fail - NOD1	C	NOD1	NOD1_Deck_Fwd_IMV_Vlv	M1DS48MDX204U	99		N/A	N/A	N/A	N/A		2A +	
ECL	IMV Deck Aft Vlv Fail - NOD1	C	NOD1	NOD1_Deck_Aft_IMV_Vlv	M1DS48MDX205U	100		N/A	N/A	N/A	N/A		2A +	
ECL	IMV Fwd Stbd Vlv Fail - NOD1	C	NOD1	NOD1_Fwd_Stbd_IMV_Vlv	M1DS48MDX206U	101		N/A	N/A	N/A	N/A		2A +	
ECL	IMV Fwd Port Vlv Fail - NOD1	C	NOD1	NOD1_Fwd_Port_IMV_Vlv	M1DS48MDX207U	102		N/A	N/A	N/A	N/A		2A +	
ECL	Smoke Detector 2 Active BIT Fail - NOD1	C	NOD1	NOD1_SD_2	M1DS48MDX211U	106	SD 2 Active BIT in Progress and one of the following: Sctr > 6.89 % obsc/mtr or Sctr < 2.95 %obsc/mtr during LED phase, Sctr > 0.82 % obsc/mtr or Sctr < -0.328 % obsc/mtr during QUIET phase, or Obsc > 97.5% contam in either phase.		N/A	N/A	N/A	N/A		2A +
ECL	Smoke Detector 2 Fail - NOD1	C	NOD1	NOD1_SD_2	M1DS48MDX212U	107		N/A	N/A	N/A	N/A		2A +	
ECL	Smoke Detector 2 Lens Contamination - NOD1	C	NOD1	NOD1_SD_2	M1DS48MDX213U	108		N/A	N/A	N/A	N/A		2A +	
ECL	Cupola RAMV Fail - NOD1	C	NOD1	NOD1_Cup_RA_MV	M1DS48MDX215U	110		N/A	N/A	N/A	N/A		2A +	
ECL	Smoke Detector Failure - FGB	C	FGB	TBD	RREC00CT0021J									
ECL	Smoke Detector Failure - SM	C	SM	TBD	RRET00TC0031J									
ECL	SKV1 Air Conditioner Fail - SM	C	SM	TBD	RRTT00TC0009J									
ECL	SKV2 Air Conditioner Fail - SM	C	SM	TBD	RRTT00TC0010J									
ECL	Liquid Consumption Reg Failure 1 - SM	C	SM	TBD	RRTT00TC0011J									
ECL	Liquid Consumption Reg Failure 2 - SM	C	SM	TBD	RRTT00TC0012J									
ECL	IMV Aft Port Fan FDIR Inhib - NOD1	A	NOD1	NOD1_Aft_Port_IMV_Fan	M1DS47MDX214U	39	Receipt of IMV Aft Port Fan FDIR Inh and Inh Cfrm cmds and IMV_Aft_Port_Fan_Status = Inh	N/A	N/A	N/A	N/A		2A +	

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
ECL	IMV Stbd Aft Fan FDIR Inhib - NOD1	A	NOD1	NOD1_Stbd_Aft_IMV_Fan	M1DS48MDX214U	109	Receipt of IMV Stbd Aft Fan FDIR Inh and Inh Cfrm cmds and IMV_Stbd_Aft_Fan_Status = Inh	N/A	N/A	N/A	N/A		2A +
ECL	IMV Port Fwd Fan FDIR Inhib - NOD1	A	NOD1	NOD1_Port_Fwd_IMV_Fan	M1DS48MDX302U	245	Receipt of IMV Port Fwd Fan FDIR Inh and Inh Cfrm cmds and IMV_Port_Fwd_Fan_Status = Inh	N/A	N/A	N/A	N/A		2A +
ECL	INVALID - Cab Press Low - FGB	A	FGB	FGB_Press_Sns	RFEC00MD0011J	256	FGB_Cab_Press_LL_Viol_Invalid_CW set to INVALID. This can be done by <b>MCC-M</b> to indicate bad data feeding this alarm, or by the FGB MDM receiving a bad status indicator for the data message containing this event.	N/A	N/A	Valid	Invalid		2A +
ECL	INVALID - Cab Press Hi - FGB	A	FGB	FGB_Press_Sns	RFEC00MD0012J	254	FGB_Cab_Press_UL_Viol_Invalid_CW set to INVALID. This can be done by <b>MCC-M</b> to indicate bad data feeding this alarm, or by the FGB MDM receiving a bad status indicator for the data message containing this event.	N/A	N/A	Valid	Invalid		2A +
ECL	INVALID - FIRE - Smoke Detector Level 1 - FGB	A	FGB	FGB_SD	RFEC00MD0029J	253	FGB_Smoke_Valid_CW set to INVALID. This can be done by <b>MCC-M</b> to indicate bad data feeding this alarm, or by the FGB MDM receiving a bad status indicator for the data message containing this event.	N/A	N/A	Valid	Invalid		2A +

## NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
ECL	INVALID - FIRE - Smoke Detector Level 2 - FGB	A	FGB	FGB_SD	RFEC00MD0030J	252	FGB_Fire_Valid_CW set to INVALID. This can be done by <b>MCC-M</b> to indicate bad data feeding this alarm, or by the FGB MDM receiving a bad status indicator for the data message containing this event.	N/A	N/A	Valid	Invalid		2A +
ECL	Air Temp Low - FGB	A	FGB	N/A	RFTC00MD0003J	259		TBD	N/A	N/A	N/A		2A +
ECL	Air Temp Hi - FGB	A	FGB	N/A	RFTC00MD0004J	258		N/A	TBD	N/A	N/A		2A +
ECL	Elektron ST-64 Power Disrupted - SM	A	SM	TBD	RRDT00TC1023J								
ECL	TBD	A	SM	TBD	RRDT00TC1024J								
ECL	SKV2 Air Conditioner Power Disrupted - SM	A	SM	TBD	RRDT00TC1036J								
ECL	SKV1 Air Conditioner Power Disrupted - SM	A	SM	TBD	RRDT00TC1037J								
ECL	TBD	A	SM	TBD	RRDT00TC1038J								
ECL	TBD	A	SM	TBD	RRDT00TC1039J								
ECL	VN1 Cabin Air Heater Power Disrupted - SM	A	SM	TBD	RRDT00TC1040J								
ECL	VN2 Cabin Air Heater Power Disrupted - SM	A	SM	TBD	RRDT00TC1041J								
ECL	VOZDUKH System Failure	A	SM	TBD	RRET00TC1021J								
EPS	DCSU 4B SCA Trip-P6	W	P6	@	P6DP34MD2072J								
EPS	DCSU 2B SCA Trip-P6	W	P6	@	P6DP34MD2083J								
EPS	BGA 4B Trip-P6	W	P6	@	P6DP34MD2096J								
EPS	BGA 2B Trip-P6	W	P6	@	P6DP34MD2108J								
EPS	SSU 4B Trip-P6	W	P6	@	P6DP34MD2137J								
EPS	SSU 2B Trip-P6	W	P6	@	P6DP34MD2140J								
EPS	DDCU 4B Overvoltage Condition-P6	W	P6	@	P6DP34MD2255J								
EPS	DDCU 4B Overtemp Condition-P6	W	P6	@	P6DP34MD2256J								
EPS	BGA 4B Overtemp Condition-P6	W	P6	@	P6DP34MD2272J								
EPS	SSU 4B Overtemp Condition-P6	W	P6	@	P6DP34MD2342J								
EPS	DDCU 2B Overvoltage Condition-P6	W	P6	@	P6DP34MD3128J								
EPS	DDCU 2B Overtemp Condition-P6	W	P6	@	P6DP34MD3129J								
EPS	BGA 2B Overtemp Condition-P6	W	P6	@	P6DP34MD3147J								
EPS	SSU 2B Overtemp Condition-P6	W	P6	@	P6DP34MD3226J								
EPS	BO3 Command Bus Power Turned Off	W	SM	@	RRDT00TC0008J								
EPS	BO3 Power Turned Off	W	SM	@	RRDT00TC0009J								
EPS	B14 Command Bus Power Turned Off	W	SM	@	RRDT00TC0010J								
EPS	B14 Power Turned Off	W	SM	@	RRDT00TC0011J								
EPS	BO1 Power Turned Off	W	SM	@	RRDT00TC0012J								
EPS	B15_2 Power Turned Off	W	SM	@	RRDT00TC0013J								

## NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	B15_2 Command Bus Power Turned Off	W	SM	@	RRDT00TC0014J								
EPS	B15_4 Power Turned Off	W	SM	@	RRDT00TC0015J								
EPS	B15_4 Command Bus Power Turned Off	W	SM	@	RRDT00TC0016J								
EPS	EPS Automatics Power Turned Off	W	SM	@	RRDT00TC0017J								
EPS	ACS Checkout Console Power Turned Off	W	SM	@	RRDT00TC0018J								
EPS	Valves (KE) Power Turned Off	W	SM	@	RRDT00TC0023J								
EPS	CEP 1, 2 Control Channel Power Turned Off	W	SM	@	RRDT00TC0024J								
EPS	EK 1-5 BUKD-90-1 Control Channel Power Turned Off	W	SM	@	RRDT00TC0025J								
EPS	EK 1-5 BUKD-90-2 Control Channel Power Turned Off	W	SM	@	RRDT00TC0026J								
EPS	SPWU1 Control Channel Power Turned Off	W	SM	@	RRDT00TC0027J								
EPS	CEP CU Control Channel Power Turned Off	W	SM	@	RRDT00TC0028J								
EPS	BUSK V1 Control Channel Power Turned Off	W	SM	@	RRDT00TC0029J								
EPS	BUSK V2 Control Channel Power Turned Off	W	SM	@	RRDT00TC0030J								
EPS	VKAY (1, 2) Control Power Turned Off	W	SM	@	RRDT00TC0033J								
EPS	PKR2 Control Channel Power Turned Off	W	SM	@	RRDT00TC0034J								
EPS	TOU Control Channel Power Turned Off	W	SM	@	RRDT00TC0035J								
EPS	A765 Interlocking (Blocking)	W	SM	@	RRDT00TC0036J								
EPS	A766 Interlocking (Blocking)	W	SM	@	RRDT00TC0037J								
EPS	BITS Matrix Power Turned Off	W	SM	@	RRDT00TC0043J								
EPS	Automatic Equipment Bus Power Turned Off	W	SM	@	RRDT00TC0044J								
EPS	DV (1, 2) Bus Power Turned Off	W	SM	@	RRDT00TC0045J								
EPS	TM (1, 2) Bus Power Turned Off	W	SM	@	RRDT00TC0046J								
EPS	AMK Power Turned Off	W	SM	@	RRDT00TC0051J								
EPS	IK 0501 Power Turned Off	W	SM	@	RRDT00TC0052J								
EPS	GL 2106 Power Turned Off	W	SM	@	RRDT00TC0053J								
EPS	Power Generation Reduction	W	SM	@	RRPC00CT0001J								
EPS	PCU Z1-3B Safing Failed-Z1	W	Z1	PCU Z13B	@								
EPS	PCU Z1-4B Safing Failed-Z1	W	Z1	PCU Z14B	@								
EPS	MDM PVCU 2B/4B Switchover Failed-P6	W	P6	PVCU	@								
EPS	FGB Power Utilization Violation - Load Shed Initiated - NOD1	C	NOD1	@	M1DP47MDX110U	170				Volts< or= 25.5	Volts> 25.5		
EPS	DDCU 4BZ Loss of Comm-Z1	C	NOD1	SEPS	M1DP47MDX215U								
EPS	DDCU 3BZ Loss of Comm-Z1	C	NOD1	SEPS	M1DP47MDX315U								
EPS	MDM PVCU 2B Loss of Comm-P6	C	NOD1	SEPS	M1DP47MDX406U								

## NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	MDM PVCU 4B Loss of Comm-P6	C	NOD1	SEPS	M1DP47MDX407U								
EPS	PCU Z14B Failure-Z1	C	NOD1	SEPS	M1DP47MDX414U								
EPS	PCU Z13B Failure-Z1	C	NOD1	SEPS	M1DP47MDX415U								
EPS	DDCU 1BL Loss of Comm-Lab	C	NOD1	SEPS	M1DS47MDX115U								
EPS	PV Local Bus Ancillary Data Error-P6	C	P6	@	P6DP34MD2001J								
EPS	BCDU 4B1 1553/FWC Errors-P6	C	P6	@	P6DP34MD2034J								
EPS	BCDU 4B1 Loss of Comm-P6	C	P6	@	P6DP34MD2035J								
EPS	BCDU 4B1 Trip-P6	C	P6	@	P6DP34MD2036J								
EPS	BCDU 4B2 1553/FWC Errors-P6	C	P6	@	P6DP34MD2037J								
EPS	BCDU 4B2 Loss of Comm-P6	C	P6	@	P6DP34MD2038J								
EPS	BCDU 4B2 Trip-P6	C	P6	@	P6DP34MD2039J								
EPS	BCDU 4B3 1553/FWC Errors-P6	C	P6	@	P6DP34MD2040J								
EPS	BCDU 4B3 Loss of Comm-P6	C	P6	@	P6DP34MD2041J								
EPS	BCDU 4B3 Trip-P6	C	P6	@	P6DP34MD2042J								
EPS	BCDU 2B1 1553/FWC Errors-P6	C	P6	@	P6DP34MD2043J								
EPS	BCDU 2B1 Loss of Comm-P6	C	P6	@	P6DP34MD2044J								
EPS	BCDU 2B1 Trip-P6	C	P6	@	P6DP34MD2045J								
EPS	BCDU 2B2 1553/FWC Errors-P6	C	P6	@	P6DP34MD2046J								
EPS	BCDU 2B2 Loss of Comm-P6	C	P6	@	P6DP34MD2047J								
EPS	BCDU 2B2 Trip-P6	C	P6	@	P6DP34MD2048J								
EPS	BCDU 2B3 1553/FWC Errors-P6	C	P6	@	P6DP34MD2051J								
EPS	BCDU 2B3 Loss of Comm-P6	C	P6	@	P6DP34MD2052J								
EPS	BCDU 2B3 Trip-P6	C	P6	@	P6DP34MD2053J								
EPS	Battery 4B11 Trip-P6	C	P6	@	P6DP34MD2056J								
EPS	Battery 4B21 Trip-P6	C	P6	@	P6DP34MD2057J								
EPS	Battery 4B31 Trip-P6	C	P6	@	P6DP34MD2058J								
EPS	Battery 2B11 Trip-P6	C	P6	@	P6DP34MD2059J								
EPS	Battery 2B21 Trip-P6	C	P6	@	P6DP34MD2060J								
EPS	Battery 2B31 Trip-P6	C	P6	@	P6DP34MD2061J								
EPS	RPCM 4B_A 1553/FWC Errors-P6	C	P6	@	P6DP34MD2064J								
EPS	RPCM 4B_A Loss of Comm-P6	C	P6	@	P6DP34MD2065J								
EPS	RPCM 4B_A Trip-P6	C	P6	@	P6DP34MD2066J								
EPS	RPCM 4B_B 1553/FWC Errors-P6	C	P6	@	P6DP34MD2067J								
EPS	RPCM 4B_B Loss of Comm-P6	C	P6	@	P6DP34MD2068J								
EPS	RPCM 4B_B Trip-P6	C	P6	@	P6DP34MD2069J								
EPS	DCSU 4B SCA Loss of Comm-P6	C	P6	@	P6DP34MD2071J								
EPS	RPCM 2B_A 1553/FWC Errors-P6	C	P6	@	P6DP34MD2075J								
EPS	RPCM 2B_A Loss of Comm-P6	C	P6	@	P6DP34MD2076J								
EPS	RPCM 2B_A Trip-P6	C	P6	@	P6DP34MD2077J								
EPS	RPCM 2B_B 1553/FWC Errors-P6	C	P6	@	P6DP34MD2078J								
EPS	RPCM 2B_B Loss of Comm-P6	C	P6	@	P6DP34MD2079J								
EPS	RPCM 2B_B Trip-P6	C	P6	@	P6DP34MD2080J								
EPS	DCSU 2B SCA Loss of Comm-P6	C	P6	@	P6DP34MD2082J								
EPS	DDCU 4B Loss of Comm-P6	C	P6	@	P6DP34MD2087J								
EPS	DDCU 4B Trip-P6	C	P6	@	P6DP34MD2088J								
EPS	DDCU 2B Loss of Comm-P6	C	P6	@	P6DP34MD2090J								
EPS	DDCU 2B Trip-P6	C	P6	@	P6DP34MD2091J								
EPS	BGA 4B 1553/FWC Errors-P6	C	P6	@	P6DP34MD2094J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	BGA 4B Loss of Comm-P6	C	P6	@	P6DP34MD2095J								
EPS	BMRRM 4B Trip-P6	C	P6	@	P6DP34MD2097J								
EPS	BGA 2B 1553/FWC Errors-P6	C	P6	@	P6DP34MD2106J								
EPS	BGA 2B Loss of Comm-P6	C	P6	@	P6DP34MD2107J								
EPS	BMRRM 2B Trip-P6	C	P6	@	P6DP34MD2109J								
EPS	SSU 4B 1553/FWC Errors-P6	C	P6	@	P6DP34MD2135J								
EPS	SSU 4B Loss of Comm-P6	C	P6	@	P6DP34MD2136J								
EPS	SSU 2B 1553/FWC Errors-P6	C	P6	@	P6DP34MD2138J								
EPS	SSU 2B Loss of Comm-P6	C	P6	@	P6DP34MD2139J								
EPS	PVCU 4B SPD1553 Bus Controller Error-P6	C	P6	@	P6DP34MD2165J								
EPS	PVCU 2B SPD1553 Bus Controller Error-P6	C	P6	@	P6DP34MD2166J								
EPS	BCDU 4B1 Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD2192J								
EPS	BCDU 4B1 Battery SOC Low Failure-P6	C	P6	@	P6DP34MD2197J								
EPS	BCDU 4B1 Overtemp Condition-P6	C	P6	@	P6DP34MD2200J								
EPS	DCSU 4B SCA Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD2232J								
EPS	DCSU 4B RBI 6 Overcurrent Condition-P6	C	P6	@	P6DP34MD2240J								
EPS	BGA 4B Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD2266J								
EPS	Batt 4B11 Undervoltage Condition-P6	C	P6	@	P6DP34MD2355J								
EPS	Batt 4B11 Temp Out Of Range-P6	C	P6	@	P6DP34MD2356J								
EPS	BMRRM 4B Motor Velocity Limit Exceeded-P6	C	P6	@	P6DP34MD2380J								
EPS	BMRRM 4B Motor Stall Condition-P6	C	P6	@	P6DP34MD2382J								
EPS	BMRRM 4B Motor Current Limit Exceeded-P6	C	P6	@	P6DP34MD2383J								
EPS	BCDU 4B2 Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD2479J								
EPS	BCDU 4B2 Battery SOC Low Failure-P6	C	P6	@	P6DP34MD2484J								
EPS	BCDU 4B2 Overtemp Condition-P6	C	P6	@	P6DP34MD2487J								
EPS	BCDU 4B3 Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD2495J								
EPS	BCDU 4B3 Battery SOC Low Failure-P6	C	P6	@	P6DP34MD2500J								
EPS	BCDU 4B3 Overtemp Condition-P6	C	P6	@	P6DP34MD2503J								
EPS	Batt 4B12 Undervoltage Condition-P6	C	P6	@	P6DP34MD2518J								
EPS	Batt 4B12 Temp Out Of Range-P6	C	P6	@	P6DP34MD2519J								

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	Batt 4B21 Undervoltage Condition-P6	C	P6	@	P6DP34MD2536J								
EPS	Batt 4B21 Temp Out Of Range-P6	C	P6	@	P6DP34MD2537J								
EPS	Batt 4B22 Undervoltage Condition-P6	C	P6	@	P6DP34MD2554J								
EPS	Batt 4B22 Temp Out Of Range-P6	C	P6	@	P6DP34MD2555J								
EPS	Batt 4B31 Undervoltage Condition-P6	C	P6	@	P6DP34MD2572J								
EPS	Batt 4B31 Temp Out Of Range-P6	C	P6	@	P6DP34MD2573J								
EPS	Batt 4B32 Undervoltage Condition-P6	C	P6	@	P6DP34MD2590J								
EPS	Batt 4B32 Temp Out Of Range-P6	C	P6	@	P6DP34MD2591J								
EPS	BCDU 2B1 Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD3007J								
EPS	BCDU 2B1 Battery SOC Low Failure-P6	C	P6	@	P6DP34MD3012J								
EPS	BCDU 2B1 Overtemp Condition-P6	C	P6	@	P6DP34MD3015J								
EPS	BCDU 2B2 Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD3026J								
EPS	BCDU 2B2 Battery SOC Low Failure-P6	C	P6	@	P6DP34MD3031J								
EPS	BCDU 2B2 Overtemp Condition-P6	C	P6	@	P6DP34MD3034J								
EPS	BCDU 2B3 Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD3045J								
EPS	BCDU 2B3 Battery SOC Low Failure-P6	C	P6	@	P6DP34MD3050J								
EPS	BCDU 2B3 Overtemp Condition-P6	C	P6	@	P6DP34MD3053J								
EPS	DCSU 2B SCA Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD3102J								
EPS	DCSU 2B RBI 6 Overcurrent Condition-P6	C	P6	@	P6DP34MD3110J								
EPS	BGA 2B Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD3141J								
EPS	Batt 2B11 Undervoltage Condition-P6	C	P6	@	P6DP34MD3241J								
EPS	Batt 2B11 Temp Out Of Range-P6	C	P6	@	P6DP34MD3242J								
EPS	Batt 2B12 Undervoltage Condition-P6	C	P6	@	P6DP34MD3260J								
EPS	Batt 2B12 Temp Out Of Range-P6	C	P6	@	P6DP34MD3261J								
EPS	Batt 2B21 Undervoltage Condition-P6	C	P6	@	P6DP34MD3279J								
EPS	Batt 2B21 Temp Out Of Range-P6	C	P6	@	P6DP34MD3280J								
EPS	Batt 2B22 Undervoltage Condition-P6	C	P6	@	P6DP34MD3298J								
EPS	Batt 2B22 Temp Out Of Range-P6	C	P6	@	P6DP34MD3299J								
EPS	Batt 2B31 Undervoltage Condition-P6	C	P6	@	P6DP34MD3317J								

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	Batt 2B31 Temp Out Of Range-P6	C	P6	@	P6DP34MD3318J								
EPS	Batt 2B32 Undervoltage Condition-P6	C	P6	@	P6DP34MD3336J								
EPS	Batt 2B32 Temp Out Of Range-P6	C	P6	@	P6DP34MD3337J								
EPS	BMRRM 2B Motor Velocity Limit Exceeded-P6	C	P6	@	P6DP34MD3353J								
EPS	BMRRM 2B Motor Stall Condition-P6	C	P6	@	P6DP34MD3355J								
EPS	BMRRM 2B Motor Current Limit Exceeded-P6	C	P6	@	P6DP34MD3356J								
EPS	Battery 4B12 Trip-P6	C	P6	@	P6DP34MD3597J								
EPS	Battery 4B22 Trip-P6	C	P6	@	P6DP34MD3598J								
EPS	Battery 4B32 Trip-P6	C	P6	@	P6DP34MD3599J								
EPS	Battery 2B12 Trip-P6	C	P6	@	P6DP34MD3600J								
EPS	Battery 2B22 Trip-P6	C	P6	@	P6DP34MD3601J								
EPS	Battery 2B32 Trip-P6	C	P6	@	P6DP34MD3602J								
EPS	BCDU 4B1 Loss of Comm Time Limit Expired-P6	C	P6	@	P6DP34MD3678J								
EPS	BCDU 4B2 Loss of Comm Time Limit Expired-P6	C	P6	@	P6DP34MD3679J								
EPS	BCDU 4B3 Loss of Comm Time Limit Expired-P6	C	P6	@	P6DP34MD3680J								
EPS	BCDU 2B1 Loss of Comm Time Limit Expired-P6	C	P6	@	P6DP34MD3684J								
EPS	BCDU 2B2 Loss of Comm Time Limit Expired -P6	C	P6	@	P6DP34MD3685J								
EPS	BCDU 2B3 Loss of Comm Time Limit Expired-P6	C	P6	@	P6DP34MD3686J								
EPS	Insufficient Power	C	SM	@	RRPC00CT0002J								
EPS	DDCU 3BZ Bit Failed-Z1	C	Z1	DDCU 3BZ	@								
EPS	DDCU 3BZ Observed vs Last Commanded State Discrepancy-Z1	C	Z1	DDCU 3BZ	@								
EPS	DDCU 3BZ Trip-Z1	C	Z1	DDCU 3BZ	@								
EPS	DDCU 4BZ Bit Failed-Z1	C	Z1	DDCU 3BZ	@								
EPS	DDCU 4BZ Observed vs Last Commanded State Discrepancy-Z1	C	Z1	DDCU 3BZ	@								
EPS	DDCU 4BZ Trip-Z1	C	Z1	DDCU 3BZ	@								
EPS	MDM PVCU 2B Failure-P6	C	P6	@	@								
EPS	MDM PVCU 4B Failure-P6	C	P6	@	@								
EPS	PVCU 2B/4B Point to Point Data Distribution Error-P6	C	P6	PVCU	@								
EPS	RPCM Z14B_B Loss of Comm - Z1	A	Z1	RPCM Z14B_B	M1DP47MDX200U	176							3A +
EPS	RPCM Z14B_A Loss of Comm - Z1	A	Z1	RPCM Z14B_A	M1DP47MDX201U	177							3A +
EPS	RPCM N1RS1_C Loss of Comm - NOD1	A	NOD1	RPCM N1RS1_C	M1DP47MDX202U	178	Intgrtn_Ctr N1PN11FC0617U			Static	Incrementing		
EPS	RPCM N1RS1_B Loss of Comm - NOD1	A	NOD1	RPCM N1RS1_B	M1DP47MDX203U	179	Intgrtn_Ctr N1PN10FC0617U			Static	Incrementing		
EPS	RPCM N1RS1_A Loss of Comm - NOD1	A	NOD1	RPCM N1RS1_A	M1DP47MDX204U	180	Intgrtn_Ctr N1PN09FC0617U			Static	Incrementing		

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	RPCM Z13B_B Loss of Comm - Z1	A	Z1	RPCM Z13B_B	M1DP47MDX205U	181							3A +
EPS	RPCM Z13B_A Loss of Comm - Z1	A	Z1	RPCM Z13B_A	M1DP47MDX206U	182							3A +
EPS	RPCM N1RS2_C Loss of Comm - NOD1	A	NOD1	RPCM N1RS2_C	M1DP47MDX207U	183	Intgrtn_Ctr N1PN15FC0617U			Static	Incrementing		
EPS	RPCM N1RS2_B Loss of Comm - NOD1	A	NOD1	RPCM N1RS2_B	M1DP47MDX208U	184	Intgrtn_Ctr N1PN14FC0617U			Static	Incrementing		
EPS	RPCM N1RS2_A Loss of Comm - NOD1	A	NOD1	RPCM N1RS2_A	M1DP47MDX209U	185	Intgrtn_Ctr N1PN13FC0617U			Static	Incrementing		
EPS	DDCU 4BZ S/W Output Overvoltage Trip-Z1	A	NOD1	SEPS	M1DP47MDX211U								
EPS	RPCM Z14B_B Trip - Z1	A	Z1	RPCM Z14B_B	M1DP47MDX300U	192							3A +
EPS	RPCM Z14B_A Trip - Z1	A	Z1	RPCM Z14B_A	M1DP47MDX301U	193							3A +
EPS	RPCM N1RS1_C Trip - NOD1	A	NOD1	RPCM N1RS1_C	M1DP47MDX302U	194	RPCM_N1RS1_C_RPC _XX_Trip_Stat,RPCM_N 1RS1_C_Undvolt_Trip_ Awaitg_Rcvy, RPCM_N1RS1_C_Undv olt_Trip						
EPS	RPCM N1RS1_B Trip - NOD1	A	NOD1	RPCM N1RS1_B	M1DP47MDX303U	195	RPCM_N1RS1_B_RPC _XX_Trip_Stat,RPCM_N 1RS1_B_Undvolt_Trip_A waitg_Rcvy, RPCM_N1RS1_B_Undv olt_Trip						
EPS	RPCM N1RS1_A Trip - NOD1	A	NOD1	RPCM N1RS1_A	M1DP47MDX304U	196	RPCM_N1RS1_A_RPC _XX_Trip_Stat,RPCM_N 1RS1_A_Undvolt_Trip_A waitg_Rcvy, RPCM_N1RS1_A_Undv olt_Trip						
EPS	RPCM Z13B_B Trip - Z1	A	Z1	RPCM Z13B_B	M1DP47MDX305U	197							3A +
EPS	RPCM Z13B_A Trip - Z1	A	Z1	RPCM Z13B_A	M1DP47MDX306U	198							3A +
EPS	RPCM N1RS2_C Trip - NOD1	A	NOD1	RPCM N1RS2_C	M1DP47MDX307U	199	RPCM_N1RS2_C_RPC _XX_Trip_Stat,RPCM_N 1RS2_C_Undvolt_Trip_ Awaitg_Rcvy, RPCM_N1RS2_C_Undv olt_Trip			nominal	Trip		
EPS	RPCM N1RS2_B Trip - NOD1	A	NOD1	RPCM N1RS2_B	M1DP47MDX308U	200	RPCM_N1RS2_B_RPC _XX_Trip_Stat,RPCM_N 1RS2_B_Undvolt_Trip_A waitg_Rcvy, RPCM_N1RS2_B_Undv olt_Trip						

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	RPCM N1RS2_A Trip - NOD1	A	NOD1	RPCM N1RS2_A	M1DP47MDX309U	201	RPCM_N1RS2_A_RPC_XX_Trip_Stat,RPCM_N1RS2_A_Undvolt_Trip_A_watg_Rcvy, RPCM_N1RS2_A_Undvolt_Trip						
EPS	DDCU 3BZ S/W Output Overvoltage Trip-Z1	A	NOD1	SEPS	M1DP47MDX311U								
EPS	BCDU 4B1 Battery Input Undervoltage Low Level 1-P6	A	NOD1	SEPS	M1DP47MDX400U								
EPS	BCDU 4B2 Battery Input Undervoltage Low Level 1-P6	A	NOD1	SEPS	M1DP47MDX401U								
EPS	BCDU 4B3 Battery Input Undervoltage Low Level 1-P6	A	NOD1	SEPS	M1DP47MDX402U								
EPS	BCDU 2B1 Battery Input Undervoltage Low Level 1-P6	A	NOD1	SEPS	M1DP47MDX403U								
EPS	BCDU 2B2 Battery Input Undervoltage Low Level 1-P6	A	NOD1	SEPS	M1DP47MDX404U								
EPS	BCDU 2B3 Battery Input Undervoltage Low Level 1-P6	A	NOD1	SEPS	M1DP47MDX405U								
EPS	BCDU 4B1 Battery Input Undervoltage Low Level 2-P6	A	NOD1	SEPS	M1DP47MDX408U								
EPS	BCDU 4B2 Battery Input Undervoltage Low Level 2-P6	A	NOD1	SEPS	M1DP47MDX409U								
EPS	BCDU 4B3 Battery Input Undervoltage Low Level 2-P6	A	NOD1	SEPS	M1DP47MDX410U								
EPS	BCDU 2B1 Battery Input Undervoltage Low Level 2-P6	A	NOD1	SEPS	M1DP47MDX411U								
EPS	BCDU 2B2 Battery Input Undervoltage Low Level 2-P6	A	NOD1	SEPS	M1DP47MDX412U								
EPS	BCDU 2B3 Battery Input Undervoltage Low Level 2-P6	A	NOD1	SEPS	M1DP47MDX413U								
EPS	BCDU 4B1 Battery Input Undervoltage Low Level 3-P6	A	NOD1	SEPS	M1DP47MDX500U								
EPS	BCDU 4B2 Battery Input Undervoltage Low Level 3-P6	A	NOD1	SEPS	M1DP47MDX501U								
EPS	BCDU 4B3 Battery Input Undervoltage Low Level 3-P6	A	NOD1	SEPS	M1DP47MDX502U								
EPS	BCDU 2B1 Battery Input Undervoltage Low Level 3-P6	A	NOD1	SEPS	M1DP47MDX503U								
EPS	BCDU 2B2 Battery Input Undervoltage Low Level 3-P6	A	NOD1	SEPS	M1DP47MDX504U								
EPS	BCDU 2B3 Battery Input Undervoltage Low Level 3-P6	A	NOD1	SEPS	M1DP47MDX505U								
EPS	BCDU 4B1 Output Power High-P6	A	NOD1	SEPS	M1DP47MDX508U								
EPS	BCDU 4B2 Output Power High-P6	A	NOD1	SEPS	M1DP47MDX509U								
EPS	BCDU 4B3 Output Power High-P6	A	NOD1	SEPS	M1DP47MDX510U								
EPS	BCDU 2B1 Output Power High-P6	A	NOD1	SEPS	M1DP47MDX511U								
EPS	BCDU 2B2 Output Power High-P6	A	NOD1	SEPS	M1DP47MDX512U								

## NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	BCDU 2B3 Output Power High-P6	A	NOD1	SEPS	M1DP47MDX513U								
EPS	RPCM LAB1D1_F_A Trip - Lab	A	LAB	RPCM LAB1D1_F_A	M1DS47MDX100U	11							3A +
EPS	RPCM LF_A Trip - Lab	A	LAB	RPCM LF_A	M1DS47MDX101U	12							3A +
EPS	RPCM N14B_C Trip - NOD1	A	NOD1	RPCM N14B_C	M1DS47MDX102U	13	RPCM_N14B_C_RPC_XX_Trip_Stat,RPCM_N14B_C_Undvolt_Trip_Awaitg_Rcvy, RPCM_N14B_C_Undvolt_Trip			nominal	Trip		
EPS	RPCM N14B_B Trip - NOD1	A	NOD1	RPCM N14B_B	M1DS47MDX103U	14	RPCM_N14B_B_RPC_X_X_Trip_Stat,RPCM_N14B_B_Undvolt_Trip_Awaitg_Rcvy, RPCM_N14B_B_Undvolt_Trip			nominal	Trip		
EPS	RPCM N14B_A Trip - NOD1	A	NOD1	RPCM N14B_A	M1DS47MDX104U	15	RPCM_N14B_A_RPC_X_X_Trip_Stat,RPCM_N14B_A_Undvolt_Trip_Awaitg_Rcvy, RPCM_N14B_A_Undvolt_Trip			nominal	Trip		
EPS	RPCM LAB1D1_F_A Loss of Comm - Lab	A	LAB	RPCM LAB1D1_F_A	M1DS47MDX105U	16							3A +
EPS	RPCM LF_A Loss of Comm - Lab	A	LAB	RPCM LF_A	M1DS47MDX106U	17							3A +
EPS	RPCM N14B_C Loss of Comm - NOD1	A	NOD1	RPCM N14B_C	M1DS47MDX107U	18	Intgrtn_Ctr N1PN07FC0617U			Static	Incrementing		
EPS	RPCM N14B_B Loss of Comm - NOD1	A	NOD1	RPCM N14B_B	M1DS47MDX108U	19	Intgrtn_Ctr N1PN06FC0617U			Static	Incrementing		
EPS	RPCM N14B_A Loss of Comm - NOD1	A	NOD1	RPCM N14B_A	M1DS47MDX109U	20	Intgrtn_Ctr N1PN05FC0617U			Static	Incrementing		
EPS	SPDA Z13B Heater A Failed - Z1	A	Z1	HTR	M1DS47MDX400U	56							3A +
EPS	SPDA Z14B Heater A Failed - Z1	A	Z1	HTR	M1DS47MDX401U	57							3A +
EPS	RPCM LAB1D5_A_A Trip - Lab	A	LAB	RPCM LAB1D5_A_A	M1DS48MDX100U	79							3A +
EPS	RPCM LA_A Trip - Lab	A	LAB	RPCM LA_A	M1DS48MDX101U	80							3A +
EPS	RPCM N13B_C Trip - NOD1	A	NOD1	RPCM N13B_C	M1DS48MDX102U	81	RPCM_N13B_C_RPC_XX_Trip_Stat,RPCM_N13B_C_Undvolt_Trip_Awaitg_Rcvy, RPCM_N13B_C_Undvolt_Trip			nominal	Trip		
EPS	RPCM N13B_B Trip - NOD1	A	NOD1	RPCM N13B_B	M1DS48MDX103U	82	RPCM_N13B_B_RPC_X_X_Trip_Stat,RPCM_N13B_B_Undvolt_Trip_Awaitg_Rcvy, RPCM_N13B_B_Undvolt_Trip			nominal	Trip		

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	RPCM N13B_A Trip - NOD1	A	NOD1	RPCM N13B_A	M1DS48MDX104U	83	RPCM_N13B_A_RPC_X_X_Trip_Stat,RPCM_N13B_A_Undvolt_Trip_Awaitg_Rcvy, RPCM_N13B_A_Undvolt_Trip			nominal	Trip		
EPS	RPCM LAB1D5_A_A Loss of Comm - Lab	A	LAB	RPCM LAB1D5_A_A	M1DS48MDX105U	84							3A +
EPS	RPCM LA_A Loss of Comm - Lab	A	LAB	RPCM LA_A	M1DS48MDX106U	85							3A +
EPS	RPCM N13B_C Loss of Comm - NOD1	A	NOD1	RPCM N13B_C	M1DS48MDX107U	86	Intgrtn_Ctr N1PN03FC0617U			Static	Incrementing		
EPS	RPCM N13B_B Loss of Comm - NOD1	A	NOD1	RPCM N13B_B	M1DS48MDX108U	87	Intgrtn_Ctr N1PN02FC0617U			Static	Incrementing		
EPS	RPCM N13B_A Loss of Comm - NOD1	A	NOD1	RPCM N13B_A	M1DS48MDX109U	88	Intgrtn_Ctr N1PN01FC0617U			Static	Incrementing		
EPS	SPDA Z13B Heater B Failed - Z1	A	Z1	HTR	M1DS48MDX410U	134							3A +
EPS	SPDA Z14B Heater B Failed - Z1	A	Z1	HTR	M1DS48MDX411U	135							3A +
EPS	DCSU 4B SCA 1553/FWC Errors-P6	A	P6	@	P6DP34MD2070J								
EPS	DCSU 2B SCA 1553/FWC Errors-P6	A	P6	@	P6DP34MD2081J								
EPS	DDCU 4B 1553/FWC Errors-P6	A	P6	@	P6DP34MD2086J								
EPS	DDCU 2B 1553/FWC Errors-P6	A	P6	@	P6DP34MD2089J								
EPS	PV PVCU BIT Error-P6	A	P6	@	P6DP34MD2145J								
EPS	PV PMCA Frame Count Static-P6	A	P6	@	P6DP34MD2147J								
EPS	PV PVCU Loss of Sync-P6	A	P6	@	P6DP34MD2148J								
EPS	PV Numeric Constraint Error-P6	A	P6	@	P6DP34MD2153J								
EPS	PV Generated Command Validation Failure-P6	A	P6	@	P6DP34MD2157J								
EPS	PV Generated Command Response Failure-P6	A	P6	@	P6DP34MD2161J								
EPS	PV Memory Checksum Error-P6	A	P6	@	P6DP34MD2169J								
EPS	PV DDCU 50Hz Data Latched-P6	A	P6	@	P6DP34MD2173J								
EPS	BCDU 4B1 Measurement Out of Range-P6	A	P6	@	P6DP34MD2191J								
EPS	BCDU 4B1 FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD2194J								
EPS	BCDU 4B1 Battery Discharge During Insolation-P6	A	P6	@	P6DP34MD2196J								
EPS	BCDU 4B1 Battery did not reach 100% SOC-P6	A	P6	@	P6DP34MD2199J								
EPS	BCDU 4B1 Overtemp Trip-P6	A	P6	@	P6DP34MD2201J								
EPS	DCSU 4B SCA Non Trip Anomaly-P6	A	P6	@	P6DP34MD2230J								
EPS	DCSU 4B SCA Measurement Out Of Range-P6	A	P6	@	P6DP34MD2231J								
EPS	DCSU 4B SCA FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD2234J								
EPS	DCSU 4B RBI 6 Overcurrent Trip-P6	A	P6	@	P6DP34MD2241J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	DDCU 4B Non Trip Anomaly-P6	A	P6	@	P6DP34MD2247J								
EPS	DDCU 4B Measurement Out Of Range-P6	A	P6	@	P6DP34MD2248J								
EPS	DDCU 4B Observed vs Last Commanded State Discrepancy-P6	A	P6	@	P6DP34MD2249J								
EPS	DDCU 4B FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD2251J								
EPS	DDCU 4B Overvoltage Trip-P6	A	P6	@	P6DP34MD2257J								
EPS	DDCU 4B Overtemp Trip-P6	A	P6	@	P6DP34MD2258J								
EPS	BGA 4B Non Trip Anomaly-P6	A	P6	@	P6DP34MD2264J								
EPS	BGA 4B Measurement Out Of Range-P6	A	P6	@	P6DP34MD2265J								
EPS	ECU 4B BGA FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD2268J								
EPS	PV4B Ancillary Data Beta Angle Lost-P6	A	P6	@	P6DP34MD2273J								
EPS	BGA 4B Overtemp Trip-P6	A	P6	@	P6DP34MD2275J								
EPS	SSU 4B Non Trip Anomaly-P6	A	P6	@	P6DP34MD2332J								
EPS	SSU 4B Measurement Out Of Range-P6	A	P6	@	P6DP34MD2333J								
EPS	SSU 4B FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD2336J								
EPS	SSU 4B Overtemp Trip-P6	A	P6	@	P6DP34MD2343J								
EPS	Batt 4B11 Measurement Out Of Range-P6	A	P6	@	P6DP34MD2350J								
EPS	Batt 4B11 Undervoltage Trip-P6	A	P6	@	P6DP34MD2353J								
EPS	Batt 4B11 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD2354J								
EPS	Batt 4B11 Heater 1 Failure-P6	A	P6	@	P6DP34MD2357J								
EPS	Batt 4B11 Heater 2 Failure-P6	A	P6	@	P6DP34MD2358J								
EPS	BMRRM 4B Motor Velocity Limit Trip-P6	A	P6	@	P6DP34MD2384J								
EPS	BMRRM 4B Motor Current Limit Trip-P6	A	P6	@	P6DP34MD2385J								
EPS	BMRRM 4B Motor Stall Trip-P6	A	P6	@	P6DP34MD2386J								
EPS	BCDU 4B2 Non Trip Anomaly-P6	A	P6	@	P6DP34MD2477J								
EPS	BCDU 4B2 Measurement Out Of Range-P6	A	P6	@	P6DP34MD2478J								
EPS	BCDU 4B2 FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD2481J								
EPS	BCDU 4B2 Battery Discharge During Insolation-P6	A	P6	@	P6DP34MD2483J								
EPS	BCDU 4B2 Battery did not reach 100% SOC-P6	A	P6	@	P6DP34MD2486J								
EPS	BCDU 4B2 Overtemp Trip-P6	A	P6	@	P6DP34MD2488J								
EPS	BCDU 4B3 Non Trip Anomaly-P6	A	P6	@	P6DP34MD2493J								
EPS	BCDU 4B3 Measurement Out Of Range-P6	A	P6	@	P6DP34MD2494J								

## NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	BCDU 4B3 FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD2497J								
EPS	BCDU 4B3 Battery Discharge During Insolation-P6	A	P6	@	P6DP34MD2499J								
EPS	BCDU 4B3 Battery did not reach 100% SOC-P6	A	P6	@	P6DP34MD2502J								
EPS	BCDU 4B3 Overtemp Trip-P6	A	P6	@	P6DP34MD2504J								
EPS	Batt 4B12 Measurement Out Of Range-P6	A	P6	@	P6DP34MD2513J								
EPS	Batt 4B12 Undervoltage Trip-P6	A	P6	@	P6DP34MD2516J								
EPS	Batt 4B12 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD2517J								
EPS	Batt 4B12 Heater 1 Failure-P6	A	P6	@	P6DP34MD2520J								
EPS	Batt 4B12 Heater 2 Failure-P6	A	P6	@	P6DP34MD2521J								
EPS	Batt 4B21 Measurement Out Of Range-P6	A	P6	@	P6DP34MD2531J								
EPS	Batt 4B21 Undervoltage Trip-P6	A	P6	@	P6DP34MD2534J								
EPS	Batt 4B21 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD2535J								
EPS	Batt 4B21 Heater 1 Failure-P6	A	P6	@	P6DP34MD2538J								
EPS	Batt 4B21 Heater 2 Failure-P6	A	P6	@	P6DP34MD2539J								
EPS	Batt 4B22 Measurement Out Of Range-P6	A	P6	@	P6DP34MD2549J								
EPS	Batt 4B22 Undervoltage Trip-P6	A	P6	@	P6DP34MD2552J								
EPS	Batt 4B22 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD2553J								
EPS	Batt 4B22 Heater 1 Failure-P6	A	P6	@	P6DP34MD2556J								
EPS	Batt 4B22 Heater 2 Failure-P6	A	P6	@	P6DP34MD2557J								
EPS	Batt 4B31 Measurement Out Of Range-P6	A	P6	@	P6DP34MD2567J								
EPS	Batt 4B31 Undervoltage Trip-P6	A	P6	@	P6DP34MD2570J								
EPS	Batt 4B31 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD2571J								
EPS	Batt 4B31 Heater 1 Failure-P6	A	P6	@	P6DP34MD2574J								
EPS	Batt 4B31 Heater 2 Failure-P6	A	P6	@	P6DP34MD2575J								
EPS	Batt 4B32 Measurement Out Of Range-P6	A	P6	@	P6DP34MD2585J								
EPS	Batt 4B32 Undervoltage Trip-P6	A	P6	@	P6DP34MD2588J								
EPS	Batt 4B32 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD2589J								
EPS	Batt 4B32 Heater 1 Failure-P6	A	P6	@	P6DP34MD2592J								
EPS	Batt 4B32 Heater 2 Failure-P6	A	P6	@	P6DP34MD2593J								
EPS	BCDU 2B1 Non Trip Anomaly-P6	A	P6	@	P6DP34MD3005J								
EPS	BCDU 2B1 Measurement Out Of Range-P6	A	P6	@	P6DP34MD3006J								
EPS	BCDU 2B1 FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD3009J								
EPS	BCDU 2B1 Battery Discharge During Insolation-P6	A	P6	@	P6DP34MD3011J								

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	BCDU 2B1 Battery did not reach 100% SOC-P6	A	P6	@	P6DP34MD3014J								
EPS	BCDU 2B1 Overtemp Trip-P6	A	P6	@	P6DP34MD3016J								
EPS	BCDU 2B2 Non Trip Anomaly-P6	A	P6	@	P6DP34MD3024J								
EPS	BCDU 2B2 Measurement Out Of Range-P6	A	P6	@	P6DP34MD3025J								
EPS	BCDU 2B2 FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD3028J								
EPS	BCDU 2B2 Battery Discharge During Insolation-P6	A	P6	@	P6DP34MD3030J								
EPS	BCDU 2B2 Battery did not reach 100% SOC-P6	A	P6	@	P6DP34MD3033J								
EPS	BCDU 2B2 Overtemp Trip-P6	A	P6	@	P6DP34MD3035J								
EPS	BCDU 2B3 Non Trip Anomaly-P6	A	P6	@	P6DP34MD3043J								
EPS	BCDU 2B3 Measurement Out Of Range-P6	A	P6	@	P6DP34MD3044J								
EPS	BCDU 2B3 FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD3047J								
EPS	BCDU 2B3 Battery Discharge During Insolation-P6	A	P6	@	P6DP34MD3049J								
EPS	BCDU 2B3 Battery did not reach 100% SOC-P6	A	P6	@	P6DP34MD3052J								
EPS	BCDU 2B3 Overtemp Trip-P6	A	P6	@	P6DP34MD3054J								
EPS	DCSU 2B SCA Non Trip Anomaly-P6	A	P6	@	P6DP34MD3100J								
EPS	DCSU 2B SCA Measurement Out Of Range-P6	A	P6	@	P6DP34MD3101J								
EPS	DCSU 2B SCA FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD3104J								
EPS	DCSU 2B RBI 6 Overcurrent Trip-P6	A	P6	@	P6DP34MD3111J								
EPS	DDCU 2B Non Trip Anomaly-P6	A	P6	@	P6DP34MD3120J								
EPS	DDCU 2B Measurement Out Of Range-P6	A	P6	@	P6DP34MD3121J								
EPS	DDCU 2B Observed vs Last Commanded State Discrepancy-P6	A	P6	@	P6DP34MD3122J								
EPS	DDCU 2B FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD3124J								
EPS	DDCU 2B Overvoltage Trip-P6	A	P6	@	P6DP34MD3130J								
EPS	DDCU 2B Overtemp Trip-P6	A	P6	@	P6DP34MD3131J								
EPS	BGA 2B Non Trip Anomaly-P6	A	P6	@	P6DP34MD3139J								
EPS	BGA 2B Measurement Out Of Range-P6	A	P6	@	P6DP34MD3140J								
EPS	ECU 2B BGA FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD3143J								
EPS	PV2B Ancillary Data Beta Angle Lost-P6	A	P6	@	P6DP34MD3148J								
EPS	BGA 2B Overtemp Trip-P6	A	P6	@	P6DP34MD3150J								
EPS	SSU 2B Non Trip Anomaly-P6	A	P6	@	P6DP34MD3216J								

## NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	SSU 2B Measurement Out Of Range-P6	A	P6	@	P6DP34MD3217J								
EPS	SSU 2B FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD3220J								
EPS	SSU 2B Overtemp Trip-P6	A	P6	@	P6DP34MD3227J								
EPS	Batt 2B11 Measurement Out Of Range-P6	A	P6	@	P6DP34MD3236J								
EPS	Batt 2B11 Undervoltage Trip-P6	A	P6	@	P6DP34MD3239J								
EPS	Batt 2B11 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD3240J								
EPS	Batt 2B11 Heater 1 Failure-P6	A	P6	@	P6DP34MD3243J								
EPS	Batt 2B11 Heater 2 Failure-P6	A	P6	@	P6DP34MD3244J								
EPS	Batt 2B12 Measurement Out Of Range-P6	A	P6	@	P6DP34MD3255J								
EPS	Batt 2B12 Undervoltage Trip-P6	A	P6	@	P6DP34MD3258J								
EPS	Batt 2B12 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD3259J								
EPS	Batt 2B12 Heater 1 Failure-P6	A	P6	@	P6DP34MD3262J								
EPS	Batt 2B12 Heater 2 Failure-P6	A	P6	@	P6DP34MD3263J								
EPS	Batt 2B21 Measurement Out Of Range-P6	A	P6	@	P6DP34MD3274J								
EPS	Batt 2B21 Undervoltage Trip-P6	A	P6	@	P6DP34MD3277J								
EPS	Batt 2B21 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD3278J								
EPS	Batt 2B21 Heater 1 Failure-P6	A	P6	@	P6DP34MD3281J								
EPS	Batt 2B21 Heater 2 Failure-P6	A	P6	@	P6DP34MD3282J								
EPS	Batt 2B22 Measurement Out Of Range-P6	A	P6	@	P6DP34MD3293J								
EPS	Batt 2B22 Undervoltage Trip-P6	A	P6	@	P6DP34MD3296J								
EPS	Batt 2B22 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD3297J								
EPS	Batt 2B22 Heater 1 Failure-P6	A	P6	@	P6DP34MD3300J								
EPS	Batt 2B22 Heater 2 Failure-P6	A	P6	@	P6DP34MD3301J								
EPS	Batt 2B31 Measurement Out Of Range-P6	A	P6	@	P6DP34MD3312J								
EPS	Batt 2B31 Undervoltage Trip-P6	A	P6	@	P6DP34MD3315J								
EPS	Batt 2B31 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD3316J								
EPS	Batt 2B31 Heater 1 Failure-P6	A	P6	@	P6DP34MD3319J								
EPS	Batt 2B31 Heater 2 Failure-P6	A	P6	@	P6DP34MD3320J								
EPS	Batt 2B32 Measurement Out Of Range-P6	A	P6	@	P6DP34MD3331J								
EPS	Batt 2B32 Undervoltage Trip-P6	A	P6	@	P6DP34MD3334J								
EPS	Batt 2B32 Temp Out Of Range Trip-P6	A	P6	@	P6DP34MD3335J								
EPS	Batt 2B32 Heater 1 Failure-P6	A	P6	@	P6DP34MD3338J								
EPS	Batt 2B32 Heater 2 Failure-P6	A	P6	@	P6DP34MD3339J								
EPS	BMRRM 2B Motor Velocity Limit Trip-P6	A	P6	@	P6DP34MD3357J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	BMRRM 2B Motor Current Limit Trip-P6	A	P6	@	P6DP34MD3358J								
EPS	BMRRM 2B Motor Stall Trip-P6	A	P6	@	P6DP34MD3359J								
EPS	PV4B Thermal Data Filter Batt 4B11 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3480J								
EPS	PV4B Thermal Data Filter Batt 4B12 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3481J								
EPS	PV4B Thermal Data Filter Batt 4B21 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3482J								
EPS	PV4B Thermal Data Filter Batt 4B22 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3483J								
EPS	PV4B Thermal Data Filter Batt 4B31 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3484J								
EPS	PV4B Thermal Data Filter Batt 4B32 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3485J								
EPS	PV4B Thermal Data Filter Batt 4B11 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3486J								
EPS	PV4B Thermal Data Filter Batt 4B12 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3487J								
EPS	PV4B Thermal Data Filter Batt 4B21 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3488J								
EPS	PV4B Thermal Data Filter Batt 4B22 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3489J								
EPS	PV4B Thermal Data Filter Batt 4B31 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3490J								
EPS	PV4B Thermal Data Filter Batt 4B32 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3491J								
EPS	PV2B Thermal Data Filter Batt 2B11 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3496J								
EPS	PV2B Thermal Data Filter Batt 2B12 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3497J								
EPS	PV2B Thermal Data Filter Batt 2B21 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3498J								
EPS	PV2B Thermal Data Filter Batt 2B22 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3499J								
EPS	PV2B Thermal Data Filter Batt 2B31 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3500J								
EPS	PV2B Thermal Data Filter Batt 2B32 Temp Sensor Failure-P6	A	P6	@	P6DP34MD3501J								
EPS	PV2B Thermal Data Filter Batt 2B11 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3502J								
EPS	PV2B Thermal Data Filter Batt 2B12 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3503J								
EPS	PV2B Thermal Data Filter Batt 2B21 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3504J								
EPS	PV2B Thermal Data Filter Batt 2B22 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3505J								
EPS	PV2B Thermal Data Filter Batt 2B31 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3506J								

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	PV2B Thermal Data Filter Batt 2B32 Pressure Sensor Failure-P6	A	P6	@	P6DP34MD3507J								
EPS	BCDU 4B1 Non Trip Anomaly-P6	A	P6	@	P6DP34MD3593J								
EPS	BCDU 4B1 Fault Isolator Trip-P6	A	P6	@	P6DP34MD3622J								
EPS	BCDU 4B1 Control Power RBI Trip-P6	A	P6	@	P6DP34MD3623J								
EPS	BCDU 4B2 Fault Isolator Trip-P6	A	P6	@	P6DP34MD3624J								
EPS	BCDU 4B2 Control Power RBI Trip-P6	A	P6	@	P6DP34MD3625J								
EPS	BCDU 4B3 Fault Isolator Trip-P6	A	P6	@	P6DP34MD3626J								
EPS	BCDU 4B3 Control Power RBI Trip-P6	A	P6	@	P6DP34MD3627J								
EPS	BCDU 2B1 Fault Isolator Trip-P6	A	P6	@	P6DP34MD3628J								
EPS	BCDU 2B1 Control Power RBI Trip-P6	A	P6	@	P6DP34MD3629J								
EPS	BCDU 2B2 Fault Isolator Trip-P6	A	P6	@	P6DP34MD3630J								
EPS	BCDU 2B2 Control Power RBI Trip-P6	A	P6	@	P6DP34MD3631J								
EPS	BCDU 2B3 Fault Isolator Trip-P6	A	P6	@	P6DP34MD3632J								
EPS	BCDU 2B3 Control Power RBI Trip-P6	A	P6	@	P6DP34MD3633J								
EPS	PVTCS PFCS 4B Min Inlet Temp Trip-P6	A	P6	@	P6DP34MD3660J								
EPS	PVTCS PFCS 4B Max Outlet Temp Trip-P6	A	P6	@	P6DP34MD3662J								
EPS	PVTCS PFCS 2B Min Inlet Temp Trip-P6	A	P6	@	P6DP34MD3665J								
EPS	PVTCS PFCS 2B Max Outlet Temp Trip-P6	A	P6	@	P6DP34MD3667J								
EPS	BCDU 4B1 Loss of Comm Trip-P6	A	P6	@	P6DP34MD3681J								
EPS	BCDU 4B2 Loss of Comm Trip-P6	A	P6	@	P6DP34MD3682J								
EPS	BCDU 4B3 Loss of Comm Trip-P6	A	P6	@	P6DP34MD3683J								
EPS	BCDU 2B1 Loss of Comm Trip-P6	A	P6	@	P6DP34MD3687J								
EPS	BCDU 2B2 Loss of Comm Trip-P6	A	P6	@	P6DP34MD3688J								
EPS	BCDU 2B3 Loss Of Comm Trip-P6	A	P6	@	P6DP34MD3689J								
EPS	TBD	A	TBD	@	P6DP34MD3694J								
EPS	TBD	A	TBD	@	P6DP34MD3695J								
EPS	TBD	A	TBD	@	P6DP34MD3696J								
EPS	TBD	A	TBD	@	P6DP34MD3697J								
EPS	TBD	A	TBD	@	P6DP34MD3698J								
EPS	TBD	A	TBD	@	P6DP34MD3699J								
EPS	TBD	A	TBD	@	P6DP34MD3700J								
EPS	TBD	A	TBD	@	P6DP34MD3701J								
EPS	TBD	A	TBD	@	P6DP34MD3702J								
EPS	TBD	A	TBD	@	P6DP34MD3703J								
EPS	TBD	A	TBD	@	P6DP34MD3704J								
EPS	TBD	A	TBD	@	P6DP34MD3705J								
EPS	TBD	A	TBD	@	P6DP34MD3706J								
EPS	TBD	A	TBD	@	P6DP34MD3707J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	TBD	A	TBD	@	P6DP34MD3708J								
EPS	TBD	A	TBD	@	P6DP34MD3709J								
EPS	TBD	A	TBD	@	P6DP34MD3710J								
EPS	TBD	A	TBD	@	P6DP34MD3711J								
EPS	TBD	A	TBD	@	P6DP34MD3712J								
EPS	TBD	A	TBD	@	P6DP34MD3713J								
EPS	TBD	A	TBD	@	P6DP34MD3714J								
EPS	TBD	A	TBD	@	P6DP34MD3715J								
EPS	TBD	A	TBD	@	P6DP34MD3716J								
EPS	TBD	A	TBD	@	P6DP34MD3717J								
EPS	NTS Electronics Power Disrupted	A	SM	@	RRDT00TC1016J								
EPS	KPV, DP Electronics Power Disrupted	A	SM	@	RRDT00TC1017J								
EPS	BOZ Power Disrupted	A	SM	@	RRDT00TC1018J								
EPS	B14 Power Disrupted	A	SM	@	RRDT00TC1019J								
EPS	EPS Power Bus Control Switching-On Power Disrupted	A	SM	@	RRDT00TC1020J								
EPS	EPS Automatics Power Disrupted	A	SM	@	RRDT00TC1021J								
EPS	ST25 Power Disrupted	A	SM	@	RRDT00TC1022J								
EPS	CEP 1,2 (Russian NOK 1,2) Control Channel Power Disrupted	A	SM	@	RRDT00TC1025J								
EPS	BUKD-90-1 EK1-5 Control Channel Power Disrupted	A	SM	@	RRDT00TC1026J								
EPS	BUKD-90-2 EK1-6-10 Control Channel Power Disrupted	A	SM	@	RRDT00TC1027J								
EPS	CPWU1 (PKS1) Control Channel Power Disrupted	A	SM	@	RRDT00TC1028J								
EPS	CEP CU (BU NOK) Control Channel Power Disrupted	A	SM	@	RRDT00TC1029J								
EPS	BUSK B1 Control Channel Power Disrupted	A	SM	@	RRDT00TC1030J								
EPS	BUSK B2 Control Channel Power Disrupted	A	SM	@	RRDT00TC1031J								
EPS	2LCR CL2 Control Channel Power Disrupted	A	SM	@	RRDT00TC1032J								
EPS	2LCR CL1 Control Channel Power Disrupted	A	SM	@	RRDT00TC1033J								
EPS	VKAY (1,2) Control Channel Power Disrupted	A	SM	@	RRDT00TC1034J								
EPS	PKR2 Control Channel Power Disrupted	A	SM	@	RRDT00TC1035J								
EPS	A765 Interlocking	A	SM	@	RRDT00TC1042J								
EPS	A766 Interlocking	A	SM	@	RRDT00TC1043J								
EPS	VAPZ Fan Power Disrupted	A	SM	@	RRDT00TC1049J								
EPS	VOL Fan Power Disrupted	A	SM	@	RRDT00TC1050J								
EPS	BITS Matrix Power Disrupted	A	SM	@	RRDT00TC1051J								
EPS	Automatic Equipment Bus Power Disrupted	A	SM	@	RRDT00TC1052J								
EPS	DV (1,2) Bus Power Disrupted	A	SM	@	RRDT00TC1053J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
EPS	TM (1,2) Bus Power Disrupted	A	SM	@	RRDT00TC1054J								
EPS	BP1A,BP2A Duplexer Power Disrupted	A	SM	@	RRDT00TC1055J								
EPS	BP1B,BP2B Duplexer Power Disrupted	A	SM	@	RRDT00TC1056J								
EPS	DDCU 3BZ FCW last Commanded State Init Failure-Z1	A	Z1	DDCU 3BZ	@								
EPS	DDCU 3BZ Measurement Out of Range-Z1	A	Z1	DDCU 3BZ	@								
EPS	DDCU 3BZ Non trip Anomaly-Z1	A	Z1	DDCU 3BZ	@								
EPS	DDCU 3BZ Output Overvoltage-Z1	A	Z1	DDCU 3BZ	@								
EPS	DDCU 3BZ Overtemperature Condition-Z1	A	Z1	DDCU 3BZ	@								
EPS	DDCU 3BZ Software Overtemperature Trip-Z1	A	Z1	DDCU 3BZ	@								
EPS	DDCU 4BZ FCW last Commanded Satate Init Failure-Z1	A	Z1	DDCU 3BZ	@								
EPS	DDCU 4BZ Measurement Out of Range-Z1	A	Z1	DDCU 3BZ	@								
EPS	DDCU 4BZ Non trip Anomaly-Z1	A	Z1	DDCU 3BZ	@								
EPS	DDCU 4BZ Output Overvoltage-Z1	A	Z1	DDCU 3BZ	@								
EPS	DDCU 4BZ Overtemperature Condition-Z1	A	Z1	DDCU 3BZ	@								
EPS	DDCU 4BZ Software Overtemperature Trip-Z1	A	Z1	DDCU 3BZ	@								
EPS	PCU Z1-3B Health Status Indicated Failure-Z1	A	Z1	PCU Z13B	@								
EPS	PCU Z1-3B Integration Counter Static-Z1	A	Z1	PCU Z13B	@								
EPS	PCU Z1-3B Loss of Comm-Z1	A	Z1	PCU Z13B	@								
EPS	PCU Z1-3B Safing Successful-Z1	A	Z1	PCU Z13B	@								
EPS	PCU Z1-3B Xe Tank OverPress Condition-Z1	A	Z1	PCU Z13B	@								
EPS	PCU Z1-4B Health Status Indicated Failure-Z1	A	Z1	PCU Z14B	@								
EPS	PCU Z1-4B Integration Counter Static-Z1	A	Z1	PCU Z14B	@								
EPS	PCU Z1-4B Loss of Comm-Z1	A	Z1	PCU Z14B	@								
EPS	PCU Z1-3B Safing Successful-Z1	A	Z1	PCU Z14B	@								
EPS	PCU Z1-4B Xe Tank OverPress Condition-Z1	A	Z1	PCU Z14B	@								
MCS	Prop System Power Failure - SM PROP	W	SM	@	RRDT00TC0001J								
MCS	Main Engine Valve Power Failed - SM PROP	W	SM	@	RRDT00TC0002J								
MCS	Main Engine Lid Power Failed - SM PROP	W	SM	@	RRDT00TC0003J								
MCS	Effectors Power Failed - SM MCS	W	SM	@	RRDT00TC0004J								
MCS	Thrusters Power Failed - SM MCS	W	SM	@	RRDT00TC0005J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
MCS	N2 Transfer System Power Failed - SM PROP	W	SM	@	RRDT00TC0006J								
MCS	N2 Transfer System Automatics Power Failed - SM PROP	W	SM	@	RRDT00TC0007J								
MCS	RS GNC Failure - SM MCS	W	SM	@	RRGT00TC0011J								
MCS	SM KURS P1, P2 Failure - SM MCS	C	SM	@	RRCC00CT0001J								
MCS	Cannot Dock Russian Vehicle - SM MCS	C	SM	@	RRGT00TC0001J								
MCS	No Backup Angular Rate Sensors - SM MCS	C	SM	@	RRGT00TC0002J								
MCS	No Backup Attitude Sensors - SM MCS	C	SM	@	RRGT00TC0003J								
MCS	No Backup Thrusters - SM MCS	C	SM	@	RRGT00TC0004J								
MCS	Cannot Perform Desaturation - SM MCS	C	SM	@	RRGT00TC0005J								
MCS	Reboost Not Performed - SM MCS	C	SM	@	RRGT00TC0006J								
MCS	No Backup Gyrodines - SM MCS	C	SM	@	RRGT00TC0007J								
MCS	State Vector Degradation - SM MCS	C	SM	@	RRGT00TC0008J								
MCS	Stabilization Decline during Orbiter Docking - SM MCS	C	SM	@	RRGT00TC0009J								
MCS	GNC/P TC Loss Of Comm To GNC MDM - SM MCS	C	SM	@	RRGT00TC0010J								
MCS	Hooks StA"-X" Closing Terminated By Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0001J								
MCS	Hooks StA"-Y" Closing Terminated By Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0002J								
MCS	Hooks StA"+Y" Closing Terminated By Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0003J								
MCS	Hooks StA"+X" Closign Terminated By Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0004J								
MCS	Hooks StA"-X" Opening Terminated By Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0005J								
MCS	Hooks StA"-Y" Opening Terminated By Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0006J								
MCS	Hooks StA"+Y" Opening Terminated By Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0007J								
MCS	Hooks StA"+X" Openign Terminated By Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0008J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
MCS	Seat Stops on StA"-X" Closing Terminated by Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0009J								
MCS	Seat Stops on StA"-Y" Closing Terminated by Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0010J								
MCS	Seat Stops on StA"+Y" Closing Terminated by Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0011J								
MCS	Seat Stops on StA"+X" Closing Terminated by Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0012J								
MCS	Seat Stops on StA"-X" Opening Terminated by Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0013J								
MCS	Seat Stops on StA"-Y" Opening Terminated by Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0014J								
MCS	Seat Stops on StA"+Y" Opening Terminated by Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0015J								
MCS	Seat Stops on StA"+X" Opening Terminated by Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0016J								
MCS	Seat Stops on StA"+X" Closing Terminated by Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0017J								
MCS	Seat Stops on StA"+X" Opening Terminated by Loss of Docking Signal - SM APAS	C	SM	@	RRNT00TC0018J								
MCS	Hooks StA"-X" Closing Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0019J								
MCS	Hooks StA"-Y" Closing Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0020J								
MCS	Hooks StA"+Y" Closing Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0021J								
MCS	Hooks StA"+X" Closing Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0022J								
MCS	Hooks StA"-X" Opening Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0023J								
MCS	Hooks StA"-Y" Opening Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0024J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
MCS	Hooks StA"+Y" Opening Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0025J								
MCS	Hooks StA"+X" Opening Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0026J								
MCS	Seat Stops StA"-X" Closing Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0027J								
MCS	Seat Stops StA"-Y" Closing Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0028J								
MCS	Seat Stops StA"+Y" Closing Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0029J								
MCS	Seat Stops StA"+X" Closing Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0030J								
MCS	Seat Stops StA"-X" Opening Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0031J								
MCS	Seat Stops StA"-Y" Opening Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0032J								
MCS	Seat Stops StA"+Y" Opening Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0033J								
MCS	Seat Stops StA"+X" Opening Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0034J								
MCS	Seat Stops on Hatch Lid StA"+X" Closing Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0035J								
MCS	Seat Stops on Hatch Lid StA"+X" Opening Terminated due to Off-Nominal Situation - SM APAS	C	SM	@	RRNT00TC0036J								
MCS	StA"-X" Hooks Not Closed - SM APAS	C	SM	@	RRNT00TC0041J								
MCS	StA"-Y" Hooks Not Closed - SM APAS	C	SM	@	RRNT00TC0042J								
MCS	StA"+Y" Hooks Not Closed - SM APAS	C	SM	@	RRNT00TC0043J								
MCS	StA"+X" Hooks Not Closed - SM APAS	C	SM	@	RRNT00TC0044J								
MCS	StA"-X" Hooks Not Opened - SM APAS	C	SM	@	RRNT00TC0045J								
MCS	StA"-Y" Hooks Not Opened - SM APAS	C	SM	@	RRNT00TC0046J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
MCS	StA"+Y" Hooks Not Opened - SM APAS	C	SM	@	RRNT00TC0047J								
MCS	StA"+X" Hooks Not Opened - SM APAS	C	SM	@	RRNT00TC0048J								
MCS	StA"-X" Seat Stops Not Closed - SM APAS	C	SM	@	RRNT00TC0049J								
MCS	StA"-Y" Seat Stops Not Closed - SM APAS	C	SM	@	RRNT00TC0050J								
MCS	StA"+Y" Seat Stops Not Closed - SM APAS	C	SM	@	RRNT00TC0051J								
MCS	StA"+X" Seat Stops Not Closed - SM APAS	C	SM	@	RRNT00TC0052J								
MCS	StA"-X" Seat Stops Not Opened - SM APAS	C	SM	@	RRNT00TC0053J								
MCS	StA"-Y" Seat Stops Not Opened - SM APAS	C	SM	@	RRNT00TC0054J								
MCS	StA"+Y" Seat Stops Not Opened - SM APAS	C	SM	@	RRNT00TC0055J								
MCS	StA"+X" Seat Stops Not Opened - SM APAS	C	SM	@	RRNT00TC0056J								
MCS	Hatch Lid StA"+X" Not Closed - SM APAS	C	SM	@	RRNT00TC0057J								
MCS	Hatch Lid StA"+X" Not Pressurized - SM APAS	C	SM	@	RRNT00TC0058J								
MCS	Hatch Lid StA"+X" Not Opened - SM APAS	C	SM	@	RRNT00TC0062J								
MCS	No Power to Prop Automatics - SM PROP	A	SM	@	RRDT00TC1001J								
MCS	No Power to BG (1,2) Iso Valve - SM PROP	A	SM	@	RRDT00TC1002J								
MCS	No Power to BO (1,2) Iso Valve - SM PROP	A	SM	@	RRDT00TC1003J								
MCS	No Power to SM Manifold Iso Valves - SM PROP	A	SM	@	RRDT00TC1004J								
MCS	No Power to SM Manifold Iso Valves - SM PROP	A	SM	@	RRDT00TC1005J								
MCS	No Power to Trans Comp Refuel System - SM PROP	A	SM	@	RRDT00TC1006J								
MCS	No Power to SM Instrument Module Proportioning System Valves - SM PROP	A	SM	@	RRDT00TC1007J								
MCS	Translational Thruster EP Valve Power Disrupted	A	SM	@	RRDT00TC1008J								
MCS	No Power to N2 Transfer Valves - SM PROP	A	SM	@	RRDT00TC1009J								
MCS	No Power to Translational Thruster Lid - SM PROP	A	SM	@	RRDT00TC1010J								
MCS	No Power to BO, BG BSKTs - SM PROP	A	SM	@	RRDT00TC1011J								

## NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
MCS	No Power to Effectors System - SM PROP	A	SM	@	RRDT00TC1012J								
MCS	No Power to Thrusters - SM PROP	A	SM	@	RRDT00TC1013J								
MCS	No Power to N2 Transfer System Automatics - SM PROP	A	SM	@	RRDT00TC1014J								
MCS	No Power Source for NTS - SM PROP	A	SM	@	RRDT00TC1015J								
MCS	Mnfld 1 Thruster +K1SM (N1) Failed - SM PROP	A	SM	@	RRGT00TC1191J								
MCS	Mnfld 1 Thruster +K2SM (N2) Failed - SM PROP	A	SM	@	RRGT00TC1192J								
MCS	Mnfld 1 Thruster +P1SM (N9) Failed - SM PROP	A	SM	@	RRGT00TC1193J								
MCS	Mnfld 1 Thruster +P2SM (N10) Failed - SM PROP	A	SM	@	RRGT00TC1194J								
MCS	Mnfld 1 Thruster +P3SM (N11) Failed - SM PROP	A	SM	@	RRGT00TC1195J								
MCS	Mnfld 1 Thruster +T1SM (N21) Failed - SM PROP	A	SM	@	RRGT00TC1196J								
MCS	Mnfld 1 Thruster +T2SM (N22) Failed - SM PROP	A	SM	@	RRGT00TC1197J								
MCS	Mnfld 1 Thruster +T3SM (N23) Failed - SM PROP	A	SM	@	RRGT00TC1198J								
MCS	Mnfld 1 Thruster -K1SM (N3) Failed - SM PROP	A	SM	@	RRGT00TC1199J								
MCS	Mnfld 1 Thruster -K2SM (N4) Failed - SM PROP	A	SM	@	RRGT00TC1200J								
MCS	Mnfld 1 Thruster -P1SM (N12) Failed - SM PROP	A	SM	@	RRGT00TC1201J								
MCS	Mnfld 1 Thruster -P2SM (N13) Failed - SM PROP	A	SM	@	RRGT00TC1202J								
MCS	Mnfld 1 Thruster -P3SM (N14) Failed - SM PROP	A	SM	@	RRGT00TC1203J								
MCS	Mnfld 1 Thruster -T1SM (N24) Failed - SM PROP	A	SM	@	RRGT00TC1204J								
MCS	Mnfld 1 Thruster -T2SM (N25) Failed - SM PROP	A	SM	@	RRGT00TC1205J								
MCS	Mnfld 1 Thruster -T3SM (N26) Failed - SM PROP	A	SM	@	RRGT00TC1206J								
MCS	Mnfld 2 Thruster +K1SM (N5) Failed - SM PROP	A	SM	@	RRGT00TC1207J								
MCS	Mnfld 2 Thruster +K2SM (N6) Failed - SM PROP	A	SM	@	RRGT00TC1208J								
MCS	Mnfld 2 Thruster +P1SM (N15) Failed - SM PROP	A	SM	@	RRGT00TC1209J								
MCS	Mnfld 2 Thruster +P2SM (N16) Failed - SM PROP	A	SM	@	RRGT00TC1210J								
MCS	Mnfld 2 Thruster +P3SM (N17) Failed - SM PROP	A	SM	@	RRGT00TC1211J								

## NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
MCS	Mnfld 2 Thruster +T1SM (N27) Failed - SM PROP	A	SM	@	RRGT00TC1212J								
MCS	Mnfld 2 Thruster +T2SM (N28) Failed - SM PROP	A	SM	@	RRGT00TC1213J								
MCS	Mnfld 2 Thruster +T3SM (N29) Failed - SM PROP	A	SM	@	RRGT00TC1214J								
MCS	Mnfld 2 Thruster -K1SM (N7) Failed - SM PROP	A	SM	@	RRGT00TC1215J								
MCS	Mnfld 2 Thruster -K2SM (N8) Failed - SM PROP	A	SM	@	RRGT00TC1216J								
MCS	Mnfld 2 Thruster -P1SM (N18) Failed - SM PROP	A	SM	@	RRGT00TC1217J								
MCS	Mnfld 2 Thruster -P2SM (N19) Failed - SM PROP	A	SM	@	RRGT00TC1218J								
MCS	Mnfld 2 Thruster -P3SM (N20) Failed - SM PROP	A	SM	@	RRGT00TC1219J								
MCS	Mnfld 2 Thruster -T1SM (N30) Failed - SM PROP	A	SM	@	RRGT00TC1220J								
MCS	Mnfld 2 Thruster -T2SM (N31) Failed - SM PROP	A	SM	@	RRGT00TC1221J								
MCS	Mnfld 2 Thruster -T3SM (N32) Failed - SM PROP	A	SM	@	RRGT00TC1222J								
MCS	Cannot Use SM KD1 - SM PROP	A	SM	@	RRGT00TC1223J								
MCS	Cannot Use SM KD2 - SM PROP	A	SM	@	RRGT00TC1224J								
MCS	ACS Manifold 1 Failed - SM PROP	A	SM	@	RRGT00TC1225J								
MCS	ACS Manifold 2 Failed - SM PROP	A	SM	@	RRGT00TC1226J								
MCS	GLONASS 1 Failed - SM MCS	A	SM	@	RRGT00TC1227J								
MCS	GLONASS 2 Failed - SM MCS	A	SM	@	RRGT00TC1228J								
MCS	I/R Sensor 256K 1 Failed - SM MCS	A	SM	@	RRGT00TC1229J								
MCS	I/R Sensor 256K 2 Failed - SM MCS	A	SM	@	RRGT00TC1230J								
MCS	I/R Sensor 256K 3 Failed - SM MCS	A	SM	@	RRGT00TC1231J								
MCS	Sun Sensor 251K 1 Failed - SM MCS	A	SM	@	RRGT00TC1232J								
MCS	Sun Sensor 251K 2 Failed - SM MCS	A	SM	@	RRGT00TC1233J								
MCS	Sun Sensor 251K 3 Failed - SM MCS	A	SM	@	RRGT00TC1234J								
MCS	Sun Sensor 251K 4 Failed - SM MCS	A	SM	@	RRGT00TC1235J								
MCS	Star Sensor 1 Failed - SM MCS	A	SM	@	RRGT00TC1236J								
MCS	Star Sensor 2 Failed - SM MCS	A	SM	@	RRGT00TC1237J								
MCS	Star Sensor 3 Failed - SM MCS	A	SM	@	RRGT00TC1238J								
MCS	Magnetometer 1 Failed - SM MCS	A	SM	@	RRGT00TC1239J								
MCS	Magnetometer 2 Failed - SM MCS	A	SM	@	RRGT00TC1240J								
MCS	GIVUS Failed - SM MCS	A	SM	@	RRGT00TC1241J								
MCS	ORT Failed - SM MCS	A	SM	@	RRGT00TC1242J								
MCS	KURS 1 - SM MCS	A	SM	@	RRGT00TC1243J								
MCS	KURS 2 - SM MCS	A	SM	@	RRGT00TC1244J								

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
MCS	Fine Attitude Sensors Failed - SM MCS	A	SM	@	RRGT00TC1245J								
MCS	Gyrodine 1 Failed - SM MCS	A	SM	@	RRGT00TC1246J								
MCS	Gyrodine 2 Failed - SM MCS	A	SM	@	RRGT00TC1247J								
MCS	Gyrodine 3 Failed - SM MCS	A	SM	@	RRGT00TC1248J								
MCS	Gyrodine 4 Failed - SM MCS	A	SM	@	RRGT00TC1249J								
MCS	Gyrodine 5 Failed - SM MCS	A	SM	@	RRGT00TC1250J								
MCS	Gyrodine 6 Failed - SM MCS	A	SM	@	RRGT00TC1251J								
MCS	Mnfld 1 Thruster Failed to Fire - SM PROP	A	SM	@	RRYT00TC1041J								
MCS	Mnfld 2 Thruster Failed to Fire - SM PROP	A	SM	@	RRYT00TC1042J								
MCS	Main Engine 1 Not Ready - SM PROP	A	SM	@	RRYT00TC1043J								
MCS	Main Engine 2 Not Ready - SM PROP	A	SM	@	RRYT00TC1044J								
MCS	Comp1 Failed for BG1 Refuel - SM PROP	A	SM	@	RRYT00TC1045J								
MCS	Comp3 Failed for BG1 Refuel - SM PROP	A	SM	@	RRYT00TC1046J								
MCS	Comp1 Failed for BG2 Refuel - SM PROP	A	SM	@	RRYT00TC1047J								
MCS	Comp3 Failed for BG2 Refuel - SM PROP	A	SM	@	RRYT00TC1048J								
MCS	Comp2 Failed for BO1 Refuel - SM PROP	A	SM	@	RRYT00TC1049J								
MCS	Comp3 Failed for BO1 Refuel - SM PROP	A	SM	@	RRYT00TC1050J								
MCS	Comp2 Failed for BO2 Refuel - SM PROP	A	SM	@	RRYT00TC1051J								
MCS	Comp3 Failed for BO2 Refuel - SM PROP	A	SM	@	RRYT00TC1052J								
PVTCS	PVTCS PFCS 4B Loss of Comm-P6	W	P6	@	P6DP34MD2119J								
PVTCS	PVTCS PFCS 2B Loss of Comm-P6	W	P6	@	P6DP34MD2127J								
PVTCS	PVTCS PFCS 4B Fluid Leak-P6	W	P6	@	P6DP34MD2305J								
PVTCS	PVTCS PFCS 2B Fluid Leak-P6	W	P6	@	P6DP34MD3185J								
PVTCS	PVTCS PFCS 4B Flow Control Valve Failure - Temp High-P6	W	P6	@	P6DP34MD3605J								
PVTCS	PVTCS PFCS 2B Flow Control Valve Failure-Temp High-P6	W	P6	@	P6DP34MD3610J								
PVTCS	PVTCS PFCS 4B Min Inlet Temp Violation-P6	W	P6	@	P6DP34MD3659J								
PVTCS	PVTCS PFCS 4B Max Outlet Temp Violation-P6	W	P6	@	P6DP34MD3661J								
PVTCS	PVTCS PFCS 2B Min Inlet Temp Violation-P6	W	P6	@	P6DP34MD3664J								
PVTCS	PVTCS PFCS 2B Max Outlet Temp Violation-P6	W	P6	@	P6DP34MD3666J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
PVTCS	PVTCS PFCS 4B 1553/FWC Errors-P6	C	P6	@	P6DP34MD2118J								
PVTCS	PVTCS PFCS 2B 1553/FWC Errors-P6	C	P6	@	P6DP34MD2126J								
PVTCS	PVTCS PFCS 4B Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD2300J								
PVTCS	PVTCS PFCS 4B Pump A Failure-P6	C	P6	@	P6DP34MD2306J								
PVTCS	PVTCS PFCS 4B Pump B Failure-P6	C	P6	@	P6DP34MD2307J								
PVTCS	PVTCS PFCS 2B Observed vs Last Commanded State Discrepancy-P6	C	P6	@	P6DP34MD3180J								
PVTCS	PVTCS PFCS 2B Pump A Failure-P6	C	P6	@	P6DP34MD3186J								
PVTCS	PVTCS PFCS 2B Pump B Failure-P6	C	P6	@	P6DP34MD3187J								
PVTCS	PVTCS PFCS 4B Warm Flow Control Valve Recalibration In Progress-P6	C	P6	@	P6DP34MD3606J								
PVTCS	PVTCS PFCS 2B Warm Flow Control Valve Recalibration In Progress-P6	C	P6	@	P6DP34MD3621J								
PVTCS	PVTCS PFCS 4B Non Trip Anomaly-P6	A	P6	@	P6DP34MD2298J								
PVTCS	PVTCS PFCS 4B Measurement Out Of Range-P6	A	P6	@	P6DP34MD2299J								
PVTCS	PVTCS PFCS 4B FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD2302J								
PVTCS	PVTCS PFCS 2B Non Trip Anomaly-P6	A	P6	@	P6DP34MD3178J								
PVTCS	PVTCS PFCS 2B Measurement Out Of Range-P6	A	P6	@	P6DP34MD3179J								
PVTCS	PVTCS PFCS 2B FWC Not Receiving Commands-P6	A	P6	@	P6DP34MD3182J								
PVTCS	PV4B Thermal Data Filter PFCS Sensor Failure-P6	A	P6	@	P6DP34MD3492J								
PVTCS	PV2B Thermal Data Filter PFCS Sensor Failure-P6	A	P6	@	P6DP34MD3508J								
PVTCS	PVTCS PFCS 4B Flow Control Valve Recalibration Complete-P6	A	P6	@	P6DP34MD3604J								
PVTCS	TBD	A	P6	@	P6DP34MD3609J								
SNM	CBM-Rapid-Safing-Failure - NOD1	C	NOD1	CBM	M1DP47MDX112U	172	CBM Rapid Safing Fails to complete.			Normal	Tripped		2A +
SNM	CBM-Rapid-Safing-in-Progress - NOD1	C	NOD1	CBM	M1DP47MDX113U	173	CBM Rapid Safing command issued.			Normal	Tripped		2A +
SNM	CBM FORWARD Primary RT Fail - NOD1	A	NOD1	CBM	M1DS47MDX006U	1	MDM to RT Communication Failure			Normal	Tripped		2A +
SNM	CBM PORT Primary RT Fail - NOD1	A	NOD1	CBM	M1DS47MDX007U	2	MDM to RT Communication Failure			Normal	Tripped		2A +

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
SNM	CBM DECK Primary RT Fail - NOD1	A	NOD1	CBM	M1DS47MDX008U	3	MDM to RT Communication Failure			Normal	Tripped		2A +
SNM	CBM STARBOARD Primary RT Fail - NOD1	A	NOD1	CBM	M1DS47MDX009U	4	MDM to RT Communication Failure			Normal	Tripped		2A +
SNM	CBM ZENITH Primary RT Fail - NOD1	A	NOD1	CBM	M1DS47MDX010U	5	MDM to RT Communication Failure			Normal	Tripped		2A +
SNM	CBM FORWARD Secondary RT Fail - NOD1	A	NOD1	CBM	M1DS48MDX005U	68	MDM to RT Communication Failure			Normal	Tripped		2A +
SNM	CBM PORT Secondary RT Fail - NOD1	A	NOD1	CBM	M1DS48MDX006U	69	MDM to RT Communication Failure			Normal	Tripped		2A +
SNM	CBM DECK Secondary RT Fail - NOD1	A	NOD1	CBM	M1DS48MDX007U	70	MDM to RT Communication Failure			Normal	Tripped		2A +
SNM	CBM STARBOARD Secondary RT Failure - NOD1	A	NOD1	CBM	M1DS48MDX008U	71	MDM to RT Communication Failure			Normal	Tripped		2A +
SNM	CBM ZENITH Secondry RT Fail - NOD1	A	NOD1	CBM	M1DS48MDX009U	72	MDM to RT Communication Failure			Normal	Tripped		2A +
TCS	Lab Low Temp Loop IFHX NH3 In Temp Low-Bypass Failed-Lab	W	LAB	@	M1DP47MDX105U								
TCS	PV2B_EEATCS_PFCS_ORU_Failur	W	Z1P6	@	P6DP34MD2121J								
TCS	PV2B_EEATCS_PFCS_Loss_of_Co mm	W	Z1P6	@	P6DP34MD2122J								
TCS	PV2B_EEATCS_PFCS_Min_Outlet_Temp_Violtn	W	Z1P6	@	P6DP34MD2124J								
TCS	PV4B_EEATCS_PFCS_ORU_Failur	W	Z1P6	@	P6DP34MD2129J								
TCS	PV2B_EEATCS_PFCS_Fluid_Leak_Condtn	W	Z1P6	@	P6DP34MD2322J								
TCS	PV4B_EEATCS_PFCS_Fluid_Leak_Condtn	W	Z1P6	@	P6DP34MD3204J								
TCS	PV4B_EEATCS_PFCS_Loss_of_Co mm	W	Z1P6	@	P6DP34MD3594J								
TCS	PV4B_EEATCS_PFCS_Min_Outlet_Temp_Violtn	W	Z1P6	@	P6DP34MD3596J								
TCS	PV2B_EEATCS_PFCS_FCV_Recal_Failur	W	Z1P6	@	P6DP34MD3611J								
TCS	PV4B_EEATCS_PFCS_FCV_Recal_Failur	W	Z1P6	@	P6DP34MD3613J								
TCS	PV4B_EEATCS_PFCS_Min_Inlet_Temp_Violation_Conditon	W	Z1P6	@	P6DP34MD3668J								
TCS	PV4B EEATCS Max Outlet Temp Violation Conditon	W	Z1P6	@	P6DP34MD3670J								
TCS	PV2B_EEATCS_PFCS_Min_Inlet_Temp_Violation_Conditon	W	Z1P6	@	P6DP34MD3672J								
TCS	PV2B EEATCS Max Outlet Temp Violation Conditon	W	Z1P6	@	P6DP34MD3674J								
TCS	PV2B EEATCS PFCS Invalid Data Condition	W	Z1P6	@	P6DP34MD3690J								

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
TCS	PV4B_EEATCS_PFCS_Invalid Data Condition	W	Z1P6	@	P6DP34MD3692J								
TCS	Cooling Loop 2 Consump Reg Control Channel 2 Power Off	W	SM	@	RRDT00TC0031J								
TCS	Cooling Loop 1 Consump Reg Control Channel 2 Power Off	W	SM	@	RRDT00TC0032J								
TCS	Cooling Loop 1 Power Turned Off	W	SM	@	RRDT00TC0038J								
TCS	Cooling Loop 2 Power Turned Off	W	SM	@	RRDT00TC0039J								
TCS	Heating Loop 1 Power Turned Off	W	SM	@	RRDT00TC0040J								
TCS	Heating Loop 2 Power Turned Off	W	SM	@	RRDT00TC0041J								
TCS	Heater (3, 4) Power Turned Off	W	SM	@	RRDT00TC0042J								
TCS	Lab Moderate Temp Loop IFHX NH3 In Temp Low-Bypass Failed - Lab	W	LAB	@	@								
TCS	PV4B_EEATCS_PFCS_Outlet_Temp_s 1&2_Invld_Data_Condition	W	Z1P6	@	@								
TCS	PV2B_EEATCS_PFCS_Outlet_Temp_s 1&2_Invld_Data_Condition	W	Z1P6	@	@								
TCS	Lab Low Temp Loop IFHX NH3 In Temp Low-Bypass Attempt-Lab	C	LAB	@	M1DP47MDX104U								
TCS	Lab Low Temp Loop IFHX NH3 In Temp Loss of Insight-Byp Attempt-Lab	C	LAB	@	M1DP47MDX106U								
TCS	PV2B_EEATCS_PFCS_Pump_A_Failur	C	Z1P6	@	P6DP34MD2323J								
TCS	PV2B_EEATCS_PFCS_Pump_B_Failur	C	P6	@	P6DP34MD2324J								
TCS	PV4B_EEATCS_PFCS_Pump_A_Failur	C	Z1P6	@	P6DP34MD3205J								
TCS	PV4B_EEATCS_PFCS_Pump_B_Failur	C	Z1P6	@	P6DP34MD3206J								
TCS	PV2B_EEATCS_PFCS_Warm_FCV_Recal_Condtn	C	Z1P6	@	P6DP34MD3607J								
TCS	PV4B_EEATCS_PFCS_Warm_FCV_Recal_Condtn	C	Z1P6	@	P6DP34MD3614J								
TCS	First External Cooling Loop Operation Failed	C	SM	@	RRTT00TC0001J								
TCS	Second External Cooling Loop Operation Failed	C	SM	@	RRTT00TC0002J								
TCS	First Internal Heating Loop Operation Failed	C	SM	@	RRTT00TC0003J								
TCS	Second Internal Heating Loop Operation Failed	C	SM	@	RRTT00TC0004J								
TCS	First Cooling Loop Seal Puncture	C	SM	@	RRTT00TC0005J								
TCS	Second Cooling Loop Seal Puncture	C	SM	@	RRTT00TC0006J								
TCS	First Internal Heating Loop Seal Puncture	C	SM	@	RRTT00TC0007J								
TCS	Second Internal Heating Loop Seal Puncture	C	SM	@	RRTT00TC0008J								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
TCS	Lab Moderate Temp Loop IFHX NH3 In Temp Low-Bypass Attempt - Lab	C	LAB	@	@								
TCS	Lab Moderate Temp Loop IFHX NH3 In Temp Loss of Insight-Byp Attempt - Lab	C	LAB	@	@								
TCS	Lab Low Temp Loop IFHX NH3 In Temp Loss of Insight-Byp Failed - Lab	C	LAB	@	@								
TCS	Lab Moderate Temp Loop IFHX NH3 In Temp Loss of Insight-Byp Failed - Lab	C	LAB	@	@								
TCS	Lab Low Temp Loop IFHX NH3 Isol Vlv Travel Time Failure-Lab	A	LAB	@	M1DP47MDX100U								
TCS	Lab Low Temp Loop IFHX NH3 Byp Vlv Travel Time Failure-Lab	A	LAB	@	M1DP47MDX101U								
TCS	Lab Low Temp Loop IFHX NH3 Isol Vlv Cmd Success Unknown-Lab	A	LAB	@	M1DP47MDX102U								
TCS	Lab Low Temp Loop IFHX NH3 Byp Vlv Cmd Success Unknown-Lab	A	LAB	@	M1DP47MDX103U								
TCS	Node 1 Heater 1A Failed - Node 1	A	NOD1	HTR	M1DS47MDX302U	42							
TCS	Node 1 Heater 2A Failed - Node 1	A	NOD1	HTR	M1DS47MDX303U	43							
TCS	Node 1 Heater 3A Failed - Node 1	A	NOD1	HTR	M1DS47MDX304U	44							
TCS	Node 1 Heater 4A Failed - Node 1	A	NOD1	HTR	M1DS47MDX305U	45							
TCS	Node 1 Heater 5A Failed - Node 1	A	NOD1	HTR	M1DS47MDX306U	46							
TCS	Node 1 Heater 6A Failed - Node 1	A	NOD1	HTR	M1DS47MDX307U	47							
TCS	Node 1 Heater 7A Failed - Node 1	A	NOD1	HTR	M1DS47MDX308U	48							
TCS	Node 1 Heater 8A Failed - Node 1	A	NOD1	HTR	M1DS47MDX309U	49							
TCS	Node 1 Heater 9A Failed-Node 1	A	NOD1	HTR	M1DS47MDX310U	50							
TCS	PMA1 Heater 1A Failed - PMA1	A	PMA1	HTR	M1DS47MDX311U	51							
TCS	PMA 1 Heater 3A Failed - PMA1	A	PMA1	HTR	M1DS47MDX313U	53							
TCS	PMA1 Heater 4A Failed - PMA1	A	PMA1	HTR	M1DS47MDX314U	54							
TCS	PMA1 Heater 5A Failed - PMA 1	A	PMA1	HTR	M1DS47MDX315U	55							
TCS	Cupola Win Heater 7A Failed - Cupola	A	CUP	HTR	M1DS48MDX304U	111							
TCS	Cupola Win Heater 7B Failed - Cupola	A	CUP	HTR	M1DS48MDX305U	112							
TCS	Cupola Win Heater 1A Failed - Cupola	A	CUP	HTR	M1DS48MDX306U	113							
TCS	Cupola Win Heater 2A Failed - Cupola	A	CUP	HTR	M1DS48MDX307U	114							
TCS	Cupola Win Heater 3A Failed - Cupola	A	CUP	HTR	M1DS48MDX308U	115							
TCS	Cupola Win Heater 4A Failed - Cupola	A	CUP	HTR	M1DS48MDX309U	116							
TCS	Cupola Win Heater 5A Failed - Cupola	A	CUP	HTR	M1DS48MDX310U	117							
TCS	Cupola Win Heater 6A Failed - Cupola	A	CUP	HTR	M1DS48MDX311U	118							

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
TCS	Node 1 Heater 1B Failed - Node 1	A	NOD1	HTR	M1DS48MDX312U	120							
TCS	Node 1 Heater 2B Failed - Node 1	A	NOD1	HTR	M1DS48MDX313U	121							
TCS	Node 1 Heater 3B Failed - Node 1	A	NOD1	HTR	M1DS48MDX314U	122							
TCS	Node 1 Heater 4B Failed - Node 1	A	NOD1	HTR	M1DS48MDX315U	123							
TCS	Node 1 Heater 5B Failed - Node 1	A	NOD1	HTR	M1DS48MDX400U	124							
TCS	Node 1 Heater 6B Failed - Node 1	A	NOD1	HTR	M1DS48MDX401U	125							
TCS	Node 1 Heater 7B Failed - Node 1	A	NOD1	HTR	M1DS48MDX402U	126							
TCS	Node 1 Heater 8B Failed - Node 1	A	NOD1	HTR	M1DS48MDX403U	127							
TCS	Node 1 Heater 9B Failed - Node 1	A	NOD1	HTR	M1DS48MDX404U	128							
TCS	PMA1 Heater 1B Failed - PMA1	A	PMA1	HTR	M1DS48MDX405U	129							
TCS	PMA1 Heater 2B Failed - PMA1	A	PMA1	HTR	M1DS48MDX406U	130							
TCS	PMA1 Heater 3B Failed - PMA1	A	PMA1	HTR	M1DS48MDX407U	131							
TCS	PMA1 Heater 5B Failed - PMA1	A	PMA1	HTR	M1DS48MDX409U	133							
TCS	PMA3 Heater 1A Failed - PMA3	A	PMA3	HTR	M1DS48MDX500U	136							
TCS	PMA3 Heater 2A Failed - PMA3	A	PMA3	HTR	M1DS48MDX501U	137							
TCS	PMA3 Heater 3A Failed - PMA3	A	PMA3	HTR	M1DS48MDX502U	138							
TCS	PMA3 Heater 4A Failed - PMA3	A	PMA3	HTR	M1DS48MDX503U	139							
TCS	PMA3 Heater 5A Failed - PMA3	A	PMA3	HTR	M1DS48MDX504U	140							
TCS	PMA3 Heater 1B Failed - PMA3	A	PMA3	HTR	M1DS48MDX505U	141							
TCS	PMA3 Heater 2B Failed - PMA3	A	PMA3	HTR	M1DS48MDX506U	142							
TCS	PMA3 Heater 3B Failed - PMA3	A	PMA3	HTR	M1DS48MDX507U	143							
TCS	PMA3 Heater 4B Failed - PMA3	A	PMA3	HTR	M1DS48MDX508U	144							
TCS	PMA3 Heater 5B Failed - PMA3	A	PMA3	HTR	M1DS48MDX509U	145							
TCS	PV2B_EEATCS_PFCS_Outlet_Temp_Inter_Sen_Err	A	Z1P6	@	P6DP34MD2313J								
TCS	PV2B_EEATCS_PFCS_Non_Trip_Discret_Failur	A	Z1P6	@	P6DP34MD2315J								
TCS	PV2B_EEATCS_PFCS_Msrmnt_OOR	A	Z1P6	@	P6DP34MD2316J								
TCS	PV4B_EEATCS_PFCS_Commanded_State_Failure	A	Z1P6	@	P6DP34MD2317J								
TCS	PV2B_EEATCS_PFCS_RT_Cmd_Failur	A	Z1P6	@	P6DP34MD2319J								
TCS	PV2B_EEATCS_PFCS_Outlet_Temp_Intra_Sensor_1_Error_Conditon	A	Z1P6	@	P6DP34MD2320J								
TCS	PV2B_EEATCS_PFCS_Loop_Outlet_Intra_Sensor_2_Error_Conditon	A	Z1P6	@	P6DP34MD2321J								
TCS	PV4B_EEATCS_PFCS_Outlet_Temp_Inter_Sen_Err	A	Z1P6	@	P6DP34MD3195J								
TCS	PV4B_EEATCS_PFCS_Non_Trip_Discret_Failur	A	Z1P6	@	P6DP34MD3197J								
TCS	PV4B_EEATCS_PFCS_Msrmnt_OOR	A	Z1P6	@	P6DP34MD3198J								
TCS	PV2B_EEATCS_PFCS_Commanded_State_Failure	A	Z1P6	@	P6DP34MD3199J								
TCS	PV4B_EEATCS_PFCS_RT_Cmd_Failur	A	Z1P6	@	P6DP34MD3201J								
TCS	PV4B_EEATCS_PFCS_Outlet_Temp_Intra_Sensor_1_Error_Conditon	A	Z1P6	@	P6DP34MD3202J								

NCS C&W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
TCS	PV4B_EEATCS_PFCS_Loop_Outlet Line Temp Intra Sensor 2 Error Cond	A	Z1P6	@	P6DP34MD3203J								
TCS	PV2B_TDF_WLS_EEATCS_PFCS_Sensor_Failure	A	Z1P6	@	P6DP34MD3493J								
TCS	PV4B_TDF_WLS_EEATCS_PFCS_Sensor_Failur	A	Z1P6	@	P6DP34MD3509J								
TCS	PV2B_EEATCS_PFCS_FCV_Recal_Cplt	A	Z1P6	@	P6DP34MD3608J								
TCS	PV4B_EEATCS_PFCS_FCV_Recal_Cplt	A	Z1P6	@	P6DP34MD3612J								
TCS	PV2B_EEATCS_PFCS_Min_Outlet_Temp_Violtn_Trip	A	Z1P6	@	P6DP34MD3615J								
TCS	PV4B_EEATCS_PFCS_Outlet_Temp_s_1&2_Invld_Data_Trip	A	Z1P6	@	P6DP34MD3616J								
TCS	PV2B_EEATCS_PFCS_Invalid_Data_Conditon_Trip	A	Z1P6	@	P6DP34MD3617J								
TCS	PV4B_EEATCS_PFCS_Min_Outlet_Temp_Violtn_Trip	A	Z1P6	@	P6DP34MD3618J								
TCS	PV2B_EEATCS_PFCS_Outlet_Temp_s_1&2_Invld_Data_Trip	A	Z1P6	@	P6DP34MD3619J								
TCS	PV4B_EEATCS_PFCS_Invalid_Data_Conditon_Trip	A	Z1P6	@	P6DP34MD3620J								
TCS	PV4B_EEATCS_PFCS_Min_Inlet_Temp_Violation_Trip	A	Z1P6	@	P6DP34MD3669J								
TCS	PV4B_EEATCS_Max_Outlet_Temp_violation_Trip	A	Z1P6	@	P6DP34MD3671J								
TCS	PV2B_EEATCS_PFCS_Min_Inlet_Temp_Violation_Trip	A	Z1P6	@	P6DP34MD3673J								
TCS	PV2B_EEATCS_Max_Outlet_Temp_Violation_Trip	A	Z1P6	@	P6DP34MD3675J								
TCS	PV4B_EEATCS_LOOP_MEASUREMENT_OUT_OF_RANGE	A	P6	@	P6DP34MD3676J								
TCS	PV2B_EEATCS_LOOP_MEASUREMENT_OUT_OF_RANGE	A	P6	@	P6DP34MD3677J								
TCS	Cooling Loop 1 Power Disrupted	A	SM	@	RRDT00TC1044J								
TCS	Cooling Loop 2 Power Disrupted	A	SM	@	RRDT00TC1045J								
TCS	Heating Loop 1 Power Disrupted	A	SM	@	RRDT00TC1046J								
TCS	Heating Loop 2 Power Disrupted	A	SM	@	RRDT00TC1047J								
TCS	Heater (3,4)(need clarification here) Power Disrupted	A	SM	@	RRDT00TC1048J								
TCS	Anomal Switching Off of First Cooling Loop	A	SM	@	RRTT00TC1021J								
TCS	Anomal Switching Off of Second Cooling Loop	A	SM	@	RRTT00TC1022J								
TCS	Lab Moderate Temp Loop IFHX_NH3_Byp_Vlv_Travel_Time_Failure - Lab	A	LAB	@	@								

NCS C&amp;W EVENT TABLE

System	Text Message	Class	Element	SubSystem	Part II PUI	Event Code	Event Driver	Analog Limit Low	Analog Limit High	Discrete Value 0=	Discrete Value 1=	Limit Location PPL ID and/or Command	Flight Effectivity
TCS	Lab Moderate Temp Loop IFHX NH3 Isol Vlv Travel Time Failure - Lab	A	LAB	@	@								
TCS	Lab Moderate Temp Loop IFHX NH3 Byp Vlv Cmd Success Unknown - Lab	A	LAB	@	@								
TCS	Lab Moderate Temp Loop IFHX NH3 Isol Vlv Cmd Success Unknown - Lab	A	LAB	@	@								

EPS PROCEDURES

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NODE 1 INTERNAL LIGHT LOCATIONS .....	4-79

**EPS**

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### 3A POWER BUS CONNECTIVITY - RACU 6

BUS LOST	EQUIPMENT LOST	FUNCTION/EQUIPMENT REDUNDANCY LOST	CONTROL/INSTRUMENTATION LOST
R A C U 6	RPDA N1RS1		
	RPCM N1RS1 A	RPC 1: N1 Htr 1A RPC 2: N1 Htr 2A RPC 3: N1 Htr 3A RPC 4: N1 Htr 4A RPC 5: N1-1 SDO Card 1A RPC 6: N1-1 SDO Card 1B RPC 11: N1-1 MDM RPC 12: N1 Htr 5A RPC 13: N1 Htr 6A RPC 14: N1 Htr 7A RPC 15: N1 Htr 8A RPC 16: N1 Htr 9A	1 of 2 Node 1 MDMs (N1-1) 1 of 2 Node 1 Shell Heater Strings (N1 A Heaters) Control of RPCM N14B A, B, and C Instrumentation from RPCM N14B A, B, and C
	RPCM N1RS1 B	RPC 5: CBM N1 Port Sec 1 RPC 6: CBM N1 Port Sec 2 RPC 13: CBM N1 Port Sec 3 RPC 14: CBM N1 Port Sec 4	1 of 2 Port CBM power sources
	RPCM N1RS1 C	RPC 1: PMA1 Htr 1A RPC 2: MDM N1-2 Srv Htr RPC 5: CBM N1 Stbd Sec 1 (Early Comm Port Ant Pwr) RPC 6: CBM N1 Stbd Sec 2 (Early Comm Port Ant Htr) RPC 12: CBM N1 Stbd Sec 3 (Early Comm Stbd Ant Pwr) RPC 13: CBM N1 Stbd Sec 4 (Early Comm Stbd Ant Htr) RPC 14: PMA1 Htr 3A RPC 15: PMA1 Htr 4A RPC 16: PMA1 Htr 5A	1 of 2 PMA1 Shell Heater Strings (PMA1 A Heaters) 1 of 2 Stbd CBM power sources Early Comm Command and Telemetry

### 3A POWER BUS CONNECTIVITY - RACU 6

	BUS LOST	EQUIPMENT LOST	FUNCTION/EQUIPMENT REDUNDANCY LOST	CONTROL/INSTRUMENTATION LOST
	RPDA N1RS1			
	RPDA Z14B			
R A C U 6	RPCM Z14B A	None		
	RPCM Z14B B	RPC 1: S-Band SASA 2 Htr RPC 4: S-Band BSP 2 Htr RPC 5: KU-Band SGANT Htr RPC 6: KU-Band SGTRC Htr RPC 7: EEATCS Non-op Htr B-1 RPC 8: SPDA Z13B Htr B RPC 9: SPDA Z14B Htr B RPC 10: CMG 2 Ext Htr RPC 11: DDCU Z14B Htr 1 RPC 12: CMG 3 Ext Htr RPC 14: PCU 1 Htr RPC 15: PCU 2 RPC 16: DDCU Z13B Htr 2 RPC 17: CMG 4 RPC 18: CMG 1	Power to CMG 2 and CMG 3 heaters Power to PCU 2 heater Power to S-Band SASA 2 and BSP 2 heaters Power to KU-Band SGANT and SGTRC heaters Power to EEATCS heater Power to 1 of 2 heaters to all other Z1 heater loads Power to 1 of 2 Plasma Contactors	

### 3A POWER BUS CONNECTIVITY - RACU 5

BUS LOST	EQUIPMENT LOST	FUNCTION/EQUIPMENT REDUNDANCY LOST	CONTROL/INSTRUMENTATION LOST
RPDA N1RS2			
RPCM N1RS2 A	RPC 1: N1 Htr 1B RPC 2: N1 Htr 2B RPC 3: N1 Htr 3B RPC 4: N1 Htr 4B RPC 5: CBM N1 Stbd Pri 1 (Early Comm Transceiver Pwr & Htr) RPC 6: CBM N1 Stbd Pri 2 (Early Comm Spare) RPC 10: CBM N1 Stbd Pri 3 (Early Comm CTP) RPC 11: CBM N1 Stbd Pri 4 (Early Comm RFPDB) RPC 12: N1 Htr 5B RPC 13: N1 Htr 6B RPC 14: N1 Htr 7B RPC 15: N1 Htr 8B RPC 16: N1 Htr 9B	1 of 2 Node1 Shell Heater Strings (N1 B Heaters) 1 of 2 Stbd CBM power sources	Early Comm Command and Telemetry
RPCM N1RS2 B	RPC 1: PMA3 Htr 1A RPC 2: PMA3 Htr 2A RPC 3: PMA3 Htr 3A RPC 4: PMA3 Htr 4A RPC 5: PMA3 Htr 5A RPC 12: PMA3 Htr 1B RPC 13: PMA3 Htr 2B RPC 14: PMA3 Htr 3B RPC 15: PMA3 Htr 4B RPC 16: PMA3 Htr 5B	2 of 2 PMA3 Shell Heater Strings	
RPCM N1RS2 C	RPC 1: PMA1 Htr 1B RPC 2: PMA1 Htr 2B RPC 3: N1-2 SDO Card 1A RPC 4: N1-2 SDO Card 1B RPC 7: CBM N1 Port Pri 1 RPC 8: CBM N1 Port Pri 2	1 of 2 Node1 MDMs (N1-2) 1 of 2 PMA1 Shell Heater Strings (PMA1 A Heaters) 1 of 2 Port CBM power sources	Control of RPCM N13B A, B, and C Instrumentation from RPCM N13B A, B, and C

### 3A POWER BUS CONNECTIVITY - RACU 5

	BUS LOST	EQUIPMENT LOST	FUNCTION/EQUIPMENT REDUNDANCY LOST	CONTROL/INSTRUMENTATION LOST
	RPDA N1RS2			
	RPCM N1RS2 C	RPC 10: CBM N1 Port Pri 3 RPC 11: CBM N1 Port Pri 4 RPC 13: N1-2 MDM RPC 14: PMA1 Htr 3B RPC 15: MDM N1-1 Srv Htr RPC 16: PMA1 Htr 5B		
R A C U 5	RPDA Z13B			
	RPCM Z13B A	None		
	RPCM Z13B B	RPC 1: S-Band SASA 2 RPC 4: S-Band BSP 2 RPC 5: KU-Band SGANT RPC 6: DDCU Z14B Htr 2 RPC 7: EEATCS Non-op Htr A-1 RPC 8: SPDA Z14B Htr A RPC 9: SPDA Z13B Htr A RPC 10: CMG 1 Ext Htr RPC 11: DDCU Z13B Htr 1 RPC 12: CMG 4 Ext Htr RPC 14: KU-Band SGTRC RPC 15: PCU 1 RPC 16: PCU 2 Htr RPC 17: CMG 3 RPC 18: CMG 2	Power to CMG 1 and CMG 4 heaters Power to EEATCS heater Power to PCU 1 heater Power to 1 of 2 heaters to all other Z1 heater loads Power to 1 of 2 Plasma Contactors	

### 3A POWER BUS CONNECTIVITY - RACU 5

BUS LOST	EQUIPMENT LOST	FUNCTION/EQUIPMENT REDUNDANCY LOST	CONTROL/INSTRUMENTATION LOST
RPDA N13B			
RPCM N13B A	RPC 4: IMV Stbd Aft Fan RPC 5: Lt Int NOD1OS4 RPC 13: Lt Int NOD1OS2-1 RPC 16: SD 2	Power to Interior Lights	
RPCM N13B B	RPC 1: Lt Int NOD1PD2 RPC 3: CBM N1 Nad Pri 1 RPC 4: CBM N1 Nad Pri 2 RPC 5: CBM N1 Nad Pri 3 RPC 6: CBM N1 Nad Pri 4 RPC 11: CBM N1 Zen Pri 1 RPC 12: CBM N1 Zen Pri 2 RPC 13: CBM N1 Zen Pri 3 RPC 14: CBM N1 Zen Pri 4 RPC 15: IMV Deck Aft Vlv RPC 16: IMV Deck Fwd Vlv	Power to Interior Lights 1 of 2 Nad CBM power sources 1 of 2 Zen CBM power sources	
RPCM N13B C	RPC 1: Lt Int NOD1OS2 RPC 3: CBM N1 Fwd Pri 1 RPC 4: CBM N1 Fwd Pri 2 RPC 5: CBM N1 Fwd Pri 3 RPC 6: CBM N1 Fwd Pri 4 RPC 13: IMV Fwd Stbd Vlv RPC 14: IMV Fwd Port Vlv RPC 16: IMV Port Fwd Fan	Power to Interior Lights 1 of 2 Fwd CBM power sources	

### 3A POWER BUS CONNECTIVITY - RACU 5

BUS LOST	EQUIPMENT LOST	FUNCTION/EQUIPMENT REDUNDANCY LOST	CONTROL/INSTRUMENTATION LOST
RPDA N14B			
A P C U 2	RPCM N14B A	RPC 2: CBM N1 Fwd Sec 1 RPC 3: CBM N1 Fwd Sec 2 RPC 14: CBM N1 Fwd Sec 3 RPC 15: CBM N1 Fwd Sec 4 RPC 16: IMV Stbd Fwd Vlv	1 of 2 Fwd CBM power sources
	RPCM N14B B	RPC 1: Lt Int NOD1SD2 RPC 3: CBM N1 Zen Sec 1 RPC 4: CBM N1 Zen Sec 2 RPC 5: CBM N1 Zen Sec 3 RPC 6: CBM N1 Zen Sec 4 RPC 11: CBM N1 Nad Sec 1 RPC 12: CBM N1 Nad Sec 2 RPC 13: CBM N1 Nad Sec 3 RPC 14: CBM N1 Nad Sec 4 RPC 16: RAMV RPC 17: Cab Fan	Power to Interior Lights 1 of 2 Zen CBM power sources 1 of 2 Nad CBM power sources
	RPCM N14B C	RPC 2: Lt Int NOD1OP4 RPC 3: SD 1 RPC 4: IMV Aft Stbd Vlv RPC 5: IMV Aft Port Vlv RPC 12: IMV Aft Port Fan RPC 13: IMV Stbd Aft Vlv RPC 14: IMV Port Fwd Vlv RPC 15: Lt Int NOD10P2-1 RPC 16: Lt Int NOD10O2-2	Power to Interior Lights

## Load Shed Tables

Table Version	Table Contents
1 (2A)	Node heaters, PMA1 heaters, & Early Comm (Nominal for 2A)
2 (2A)	Node heaters, & PMA heaters
3 (2A)	Node heaters, & Early Comm
4 (2A)	Node Heaters
5 (2A)	Blank (i.e. no entries)
6 (2A)	All 2A Loads
7 (3A)	All 3A Loads
8 (3A)	Node heaters, PMA1 heaters, PMA3 heaters, Early Comm, & Z1 heaters (Nominal for 2A)

Version 1: Node heaters, PMA heaters, & Early Comm

PUI	Command
M1TH95SM1272K	Nod1_Zn1_Htr1_Inh
M1TH95SM1297K	Nod1_Zn1_Htr2_Inh
M1TH95SM1273K	Nod1_Zn2_Htr1_Inh
M1TH95SM1298K	Nod1_Zn2_Htr2_Inh
M1TH95SM1274K	Nod1_Zn3_Htr1_Inh
M1TH95SM1299K	Nod1_Zn3_Htr2_Inh
M1TH95SM1275K	Nod1_Zn4_Htr1_Inh
M1TH95SM1300K	Nod1_Zn4_Htr2_Inh
M1TH95SM1276K	Nod1_Zn5_Htr1_Inh
M1TH95SM1301K	Nod1_Zn5_Htr2_Inh
M1TH95SM1277K	Nod1_Zn6_Htr1_Inh
M1TH95SM1302K	Nod1_Zn6_Htr2_Inh
M1TH95SM1278K	Nod1_Zn7_Htr1_Inh
M1TH95SM1303K	Nod1_Zn7_Htr2_Inh
M1TH95SM1279K	Nod1_Zn8_Htr1_Inh
M1TH95SM1304K	Nod1_Zn8_Htr2_Inh
M1TH95SM1280K	Nod1_Zn9_Htr1_Inh
M1TH95SM1305K	Nod1_Zn9_Htr2_Inh
M1TH95SM1281K	PMA1_Zn1_Htr1_Inh
M1TH95SM1306K	PMA1_Zn1_Htr2_Inh
M1TH95SM1307K	PMA1_Zn2_Htr2_Inh
M1TH95SM1283K	PMA1_Zn3_Htr1_Inh
M1TH95SM1308K	PMA1_Zn3_Htr2_Inh
M1TH95SM1284K	PMA1_Zn4_Htr1_Inh
M1TH95SM1285K	PMA1_Zn5_Htr1_Inh
M1TH95SM1310K	PMA1_Zn5_Htr2_Inh
M1PR95SM2085K	RPCM_N1RS1_C_RPC_05_CBM_N1_Stbd_Pri_1_Op (ECOM)
M1PR95SM2086K	RPCM_N1RS1_C_RPC_06_CBM_N1_Stbd_Pri_2_Op (ECOM)
M1PR95SM2092K	RPCM_N1RS1_C_RPC_12_CBM_N1_Stbd_Sec_1_Op (ECOM)
M1PR95SM2093K	RPCM_N1RS1_C_RPC_13_CBM_N1_Stbd_Sec_2_Op (ECOM)
M1PR95SM2139K	RPCM_N1RS2_A_RPC_05_CBM_N1_Stbd_Pri_3_Op (ECOM)
M1PR95SM2140K	RPCM_N1RS2_A_RPC_06_CBM_N1_Stbd_Pri_4_Op (ECOM)
M1PR95SM2144K	RPCM_N1RS2_A_RPC_10_CBM_N1_Stbd_Sec_3_Op (ECOM)
M1PR95SM2145K	RPCM_N1RS2_A_RPC_11_CBM_N1_Stbd_Sec_4_Op (ECOM)

## Load Shed Tables

Version 2: Node heaters & PMA heaters

PUI	Command
M1TH95SM1272K	Nod1_Zn1_Htr1_Inh
M1TH95SM1297K	Nod1_Zn1_Htr2_Inh
M1TH95SM1273K	Nod1_Zn2_Htr1_Inh
M1TH95SM1298K	Nod1_Zn2_Htr2_Inh
M1TH95SM1274K	Nod1_Zn3_Htr1_Inh
M1TH95SM1299K	Nod1_Zn3_Htr2_Inh
M1TH95SM1275K	Nod1_Zn4_Htr1_Inh
M1TH95SM1300K	Nod1_Zn4_Htr2_Inh
M1TH95SM1276K	Nod1_Zn5_Htr1_Inh
M1TH95SM1301K	Nod1_Zn5_Htr2_Inh
M1TH95SM1277K	Nod1_Zn6_Htr1_Inh
M1TH95SM1302K	Nod1_Zn6_Htr2_Inh
M1TH95SM1278K	Nod1_Zn7_Htr1_Inh
M1TH95SM1303K	Nod1_Zn7_Htr2_Inh
M1TH95SM1279K	Nod1_Zn8_Htr1_Inh
M1TH95SM1304K	Nod1_Zn8_Htr2_Inh
M1TH95SM1280K	Nod1_Zn9_Htr1_Inh
M1TH95SM1305K	Nod1_Zn9_Htr2_Inh
M1TH95SM1281K	PMA1_Zn1_Htr1_Inh
M1TH95SM1306K	PMA1_Zn1_Htr2_Inh
M1TH95SM1307K	PMA1_Zn2_Htr2_Inh
M1TH95SM1283K	PMA1_Zn3_Htr1_Inh
M1TH95SM1308K	PMA1_Zn3_Htr2_Inh
M1TH95SM1284K	PMA1_Zn4_Htr1_Inh
M1TH95SM1285K	PMA1_Zn5_Htr1_Inh
M1TH95SM1310K	PMA1_Zn5_Htr2_Inh

## Load Shed Tables

Version 3: Node heaters & Early Comm

PUI	Command
M1TH95SM1272K	Nod1_Zn1_Htr1_Inh
M1TH95SM1297K	Nod1_Zn1_Htr2_Inh
M1TH95SM1273K	Nod1_Zn2_Htr1_Inh
M1TH95SM1298K	Nod1_Zn2_Htr2_Inh
M1TH95SM1274K	Nod1_Zn3_Htr1_Inh
M1TH95SM1299K	Nod1_Zn3_Htr2_Inh
M1TH95SM1275K	Nod1_Zn4_Htr1_Inh
M1TH95SM1300K	Nod1_Zn4_Htr2_Inh
M1TH95SM1276K	Nod1_Zn5_Htr1_Inh
M1TH95SM1301K	Nod1_Zn5_Htr2_Inh
M1TH95SM1277K	Nod1_Zn6_Htr1_Inh
M1TH95SM1302K	Nod1_Zn6_Htr2_Inh
M1TH95SM1278K	Nod1_Zn7_Htr1_Inh
M1TH95SM1303K	Nod1_Zn7_Htr2_Inh
M1TH95SM1279K	Nod1_Zn8_Htr1_Inh
M1TH95SM1304K	Nod1_Zn8_Htr2_Inh
M1TH95SM1280K	Nod1_Zn9_Htr1_Inh
M1TH95SM1305K	Nod1_Zn9_Htr2_Inh
M1PR95SM2085K	RPCM_N1RS1_C_RPC_05_CBM_N1_Stbd_Pri_1_Op (ECOM)
M1PR95SM2086K	RPCM_N1RS1_C_RPC_06_CBM_N1_Stbd_Pri_2_Op (ECOM)
M1PR95SM2092K	RPCM_N1RS1_C_RPC_12_CBM_N1_Stbd_Sec_1_Op (ECOM)
M1PR95SM2093K	RPCM_N1RS1_C_RPC_13_CBM_N1_Stbd_Sec_2_Op (ECOM)
M1PR95SM2139K	RPCM_N1RS2_A_RPC_05_CBM_N1_Stbd_Pri_3_Op (ECOM)
M1PR95SM2140K	RPCM_N1RS2_A_RPC_06_CBM_N1_Stbd_Pri_4_Op (ECOM)
M1PR95SM2144K	RPCM_N1RS2_A_RPC_10_CBM_N1_Stbd_Sec_3_Op (ECOM)
M1PR95SM2145K	RPCM_N1RS2_A_RPC_11_CBM_N1_Stbd_Sec_4_Op (ECOM)

## Load Shed Tables

Version 4: Node heaters

PUI	Command
M1TH95SM1272K	Nod1_Zn1_Htr1_Inh
M1TH95SM1297K	Nod1_Zn1_Htr2_Inh
M1TH95SM1273K	Nod1_Zn2_Htr1_Inh
M1TH95SM1298K	Nod1_Zn2_Htr2_Inh
M1TH95SM1274K	Nod1_Zn3_Htr1_Inh
M1TH95SM1299K	Nod1_Zn3_Htr2_Inh
M1TH95SM1275K	Nod1_Zn4_Htr1_Inh
M1TH95SM1300K	Nod1_Zn4_Htr2_Inh
M1TH95SM1276K	Nod1_Zn5_Htr1_Inh
M1TH95SM1301K	Nod1_Zn5_Htr2_Inh
M1TH95SM1277K	Nod1_Zn6_Htr1_Inh
M1TH95SM1302K	Nod1_Zn6_Htr2_Inh
M1TH95SM1278K	Nod1_Zn7_Htr1_Inh
M1TH95SM1303K	Nod1_Zn7_Htr2_Inh
M1TH95SM1279K	Nod1_Zn8_Htr1_Inh
M1TH95SM1304K	Nod1_Zn8_Htr2_Inh
M1TH95SM1280K	Nod1_Zn9_Htr1_Inh
M1TH95SM1305K	Nod1_Zn9_Htr2_Inh

## Load Shed Tables

## Version 5: Blank (i.e., no entries)

## Load Shed Tables

Version 6: All 2A Loads

PUI	Command
M1TH95SM1272K	Nod1_Zn1_Htr1_Inh
M1TH95SM1297K	Nod1_Zn1_Htr2_Inh
M1TH95SM1273K	Nod1_Zn2_Htr1_Inh
M1TH95SM1298K	Nod1_Zn2_Htr2_Inh
M1TH95SM1274K	Nod1_Zn3_Htr1_Inh
M1TH95SM1299K	Nod1_Zn3_Htr2_Inh
M1TH95SM1275K	Nod1_Zn4_Htr1_Inh
M1TH95SM1300K	Nod1_Zn4_Htr2_Inh
M1TH95SM1276K	Nod1_Zn5_Htr1_Inh
M1TH95SM1301K	Nod1_Zn5_Htr2_Inh
M1TH95SM1277K	Nod1_Zn6_Htr1_Inh
M1TH95SM1302K	Nod1_Zn6_Htr2_Inh
M1TH95SM1278K	Nod1_Zn7_Htr1_Inh
M1TH95SM1303K	Nod1_Zn7_Htr2_Inh
M1TH95SM1279K	Nod1_Zn8_Htr1_Inh
M1TH95SM1304K	Nod1_Zn8_Htr2_Inh
M1TH95SM1280K	Nod1_Zn9_Htr1_Inh
M1TH95SM1305K	Nod1_Zn9_Htr2_Inh
M1TH95SM1281K	PMA1_Zn1_Htr1_Inh
M1TH95SM1306K	PMA1_Zn1_Htr2_Inh
M1TH95SM1307K	PMA1_Zn2_Htr2_Inh
M1TH95SM1283K	PMA1_Zn3_Htr1_Inh
M1TH95SM1308K	PMA1_Zn3_Htr2_Inh
M1TH95SM1284K	PMA1_Zn4_Htr1_Inh
M1TH95SM1285K	PMA1_Zn5_Htr1_Inh
M1TH95SM1310K	PMA1_Zn5_Htr2_Inh
M1PR95SM2085K	RPCM_N1RS1_C_RPC_05_CBM_N1_Stbd_Pri_1_Op (ECOM)
M1PR95SM2086K	RPCM_N1RS1_C_RPC_06_CBM_N1_Stbd_Pri_2_Op (ECOM)
M1PR95SM2092K	RPCM_N1RS1_C_RPC_12_CBM_N1_Stbd_Sec_1_Op (ECOM)
M1PR95SM2093K	RPCM_N1RS1_C_RPC_13_CBM_N1_Stbd_Sec_2_Op (ECOM)
M1PR95SM2139K	RPCM_N1RS2_A_RPC_05_CBM_N1_Stbd_Pri_3_Op (ECOM)
M1PR95SM2140K	RPCM_N1RS2_A_RPC_06_CBM_N1_Stbd_Pri_4_Op (ECOM)
M1PR95SM2144K	RPCM_N1RS2_A_RPC_10_CBM_N1_Stbd_Sec_3_Op (ECOM)
M1PR95SM2145K	RPCM_N1RS2_A_RPC_11_CBM_N1_Stbd_Sec_4_Op (ECOM)
M1TH95SM1309K	MDM_N1_1_Srv_Htr_Inh
M1TH95SM1282K	MDM_N1_2_Srv_Htr_Inh
M1PR95SM1977K	RPCM_N1RS1_A_RPC_05_MDM_Nod1_1_SDO_Card_1A_Op
M1PR95SM2245K	RPCM_N1RS2_C_RPC_03_MDM_Nod1_2_SDO_Card_1A_Op
M1PR95SM1983K	RPCM_N1RS1_A_RPC_11_MDM_Nod1_1_Op
M1PR95SM2255K	RPCM_N1RS2_C_RPC_13_MDM_Nod1_2_Op

## Load Shed Tables

Version 7: All 3A Loads

PUI	Command
M1TH95SM1272K	Nod1_Zn1_Htr1_Inh
M1TH95SM1297K	Nod1_Zn1_Htr2_Inh
M1TH95SM1273K	Nod1_Zn2_Htr1_Inh
M1TH95SM1298K	Nod1_Zn2_Htr2_Inh
M1TH95SM1274K	Nod1_Zn3_Htr1_Inh
M1TH95SM1299K	Nod1_Zn3_Htr2_Inh
M1TH95SM1275K	Nod1_Zn4_Htr1_Inh
M1TH95SM1300K	Nod1_Zn4_Htr2_Inh
M1TH95SM1276K	Nod1_Zn5_Htr1_Inh
M1TH95SM1301K	Nod1_Zn5_Htr2_Inh
M1TH95SM1277K	Nod1_Zn6_Htr1_Inh
M1TH95SM1302K	Nod1_Zn6_Htr2_Inh
M1TH95SM1278K	Nod1_Zn7_Htr1_Inh
M1TH95SM1303K	Nod1_Zn7_Htr2_Inh
M1TH95SM1279K	Nod1_Zn8_Htr1_Inh
M1TH95SM1304K	Nod1_Zn8_Htr2_Inh
M1TH95SM1280K	Nod1_Zn9_Htr1_Inh
M1TH95SM1305K	Nod1_Zn9_Htr2_Inh
M1TH95SM1281K	PMA1_Zn1_Htr1_Inh
M1TH95SM1306K	PMA1_Zn1_Htr2_Inh
M1TH95SM1307K	PMA1_Zn2_Htr2_Inh
M1TH95SM1283K	PMA1_Zn3_Htr1_Inh
M1TH95SM1308K	PMA1_Zn3_Htr2_Inh
M1TH95SM1284K	PMA1_Zn4_Htr1_Inh
M1TH95SM1285K	PMA1_Zn5_Htr1_Inh
M1TH95SM1310K	PMA1_Zn5_Htr2_Inh
M1TH95SM1317K	PMA3_Zn1_Htr1_Inh
M1TH95SM1318K	PMA3_Zn2_Htr1_Inh
M1TH95SM1319K	PMA3_Zn3_Htr1_Inh
M1TH95SM1320K	PMA3_Zn4_Htr1_Inh
M1TH95SM1321K	PMA3_Zn5_Htr1_Inh
M1TH95SM1322K	PMA3_Zn1_Htr2_Inh
M1TH95SM1323K	PMA3_Zn2_Htr2_Inh
M1TH95SM1324K	PMA3_Zn3_Htr2_Inh
M1TH95SM1325K	PMA3_Zn4_Htr2_Inh
M1TH95SM1326K	PMA3_Zn5_Htr2_Inh
M1PR95SM2085K	RPCM_N1RS1_C_RPC_05_CBM_N1_Stbd_Pri_1_Op (ECOM)
M1PR95SM2086K	RPCM_N1RS1_C_RPC_06_CBM_N1_Stbd_Pri_2_Op (ECOM)
M1PR95SM2092K	RPCM_N1RS1_C_RPC_12_CBM_N1_Stbd_Sec_1_Op (ECOM)
M1PR95SM2093K	RPCM_N1RS1_C_RPC_13_CBM_N1_Stbd_Sec_2_Op (ECOM)
M1PR95SM2139K	RPCM_N1RS2_A_RPC_05_CBM_N1_Stbd_Pri_3_Op (ECOM)
M1PR95SM2140K	RPCM_N1RS2_A_RPC_06_CBM_N1_Stbd_Pri_4_Op (ECOM)
M1PR95SM2144K	RPCM_N1RS2_A_RPC_10_CBM_N1_Stbd_Sec_3_Op (ECOM)
M1PR95SM2145K	RPCM_N1RS2_A_RPC_11_CBM_N1_Stbd_Sec_4_Op (ECOM)
M1TH95SM1312K	SPDA_Z14B_Htr1_Inh
M1TH95SM1311K	SPDA_Z13B_Htr2_Inh
M1PR95SM2575K	RPCM_Z13B_B_RPC_10_CMG1_EA_Htr1_Op
M1PR95SM2576K	RPCM_Z13B_B_RPC_11_DDCU_Z13B_Htr1_Op

### Load Shed Tables

M1PR95SM2577K	RPCM_Z13B_B_RPC_12_CMG4_EA_Htr1_Op
M1PR95SM2579K	RPCM_Z13B_B_RPC_14_PCU_Z14B_B_Htr_Op
M1PR95SM2581K	RPCM_Z13B_B_RPC_16_DDCU_Z14B_Htr-2_Op
M1PR95SM2674K	RPCM_Z14B_B_RPC_01_RFG_P_Htr_Op
M1PR95SM2675K	RPCM_Z14B_B_RPC_02_RFG_P_Htr_Op
M1PR95SM2676K	RPCM_Z14B_B_RPC_03_XPDR_P_Htr_Op
M1PR95SM2677K	RPCM_Z14B_B_RPC_04_BSP_P_Htr_Op
M1PR95SM2678K	RPCM_Z14B_B_RPC_05_Ku_Ant_Htr_Op
M1PR95SM2679K	RPCM_Z14B_B_RPC_06_Ku_TRC_Htr_Op
M1TH95SM1286K	SPDA_Z13B_Htr1_Inh
M1TH95SM1287K	SPDA_Z14B_Htr2_Inh
M1PR95SM2683K	RPCM_Z14B_B_RPC_10_CMG2_EA_Htr1_Op
M1PR95SM2684K	RPCM_Z14B_B_RPC_11_DDCU_Z14B_Htr-1_Op
M1PR95SM2685K	RPCM_Z14B_B_RPC_12_CMG3_EA_Htr1_Op
M1PR95SM2687K	RPCM_Z14B_B_RPC_14_PCU_Z13B_B_Htr_Op
M1PR95SM2689K	RPCM_Z14B_B_RPC_16_DDCU_Z13B_Htr-2_Op
M1TH95SM1309K	MDM_N1_1_Srv_Htr_Inh
M1TH95SM1282K	MDM_N1_2_Srv_Htr_Inh
M1PR95SM1977K	RPCM_N1RS1_A_RPC_05_MDM_Nod1_1_SDO_Card_1A_Op
M1PR95SM2245K	RPCM_N1RS2_C_RPC_03_MDM_Nod1_2_SDO_Card_1A_Op
M1PR95SM1983K	RPCM_N1RS1_A_RPC_11_MDM_Nod1_1_Op
M1PR95SM2255K	RPCM_N1RS2_C_RPC_13_MDM_Nod1_2_Op

## Load Shed Tables

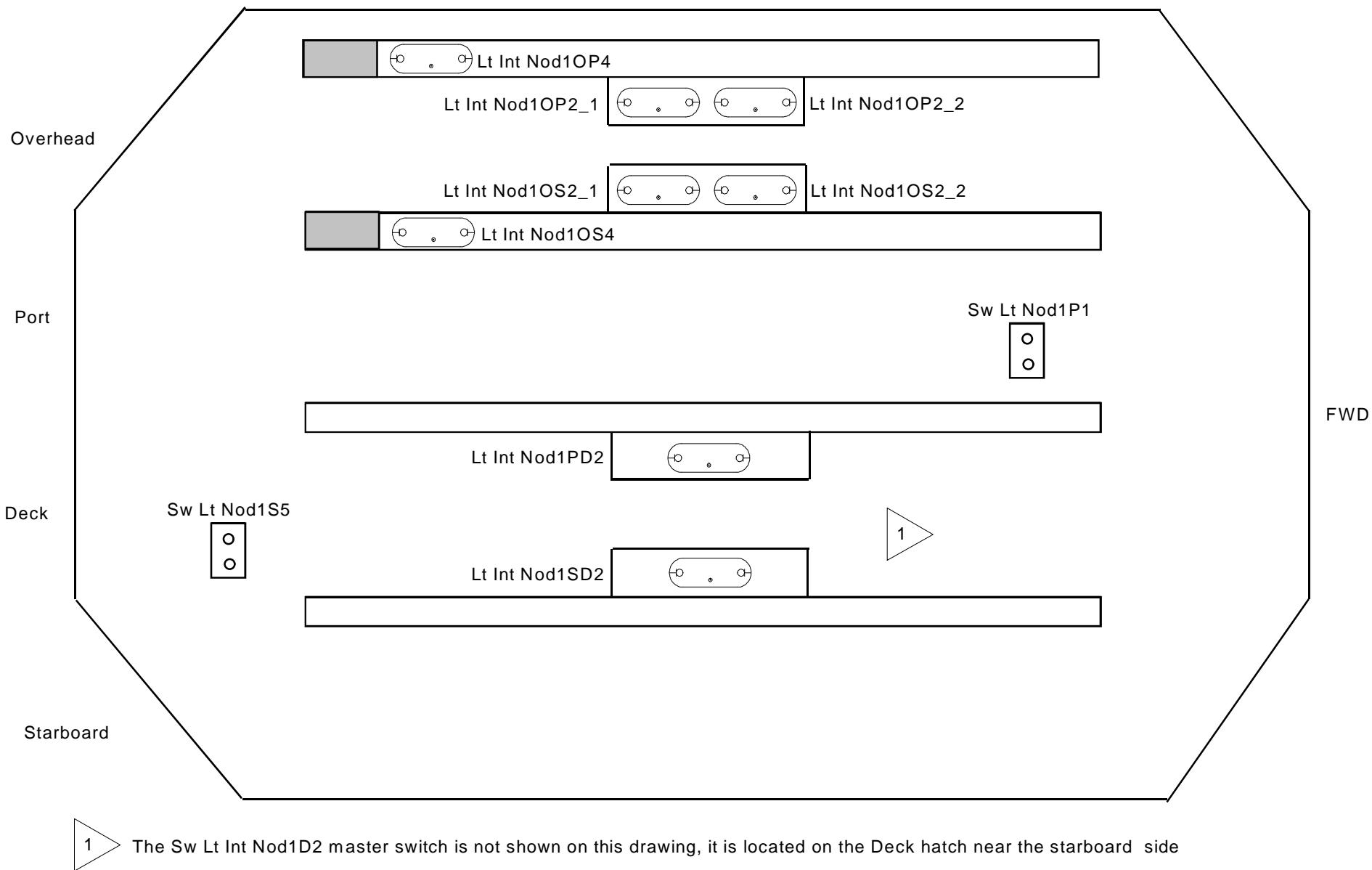
Version 8: Node heaters, PMA 1 heaters, PMA 3 heaters, Z1 loads & Early Comm  
(Nominal for 3A)

<b>PUI</b>	<b>Command</b>
M1TH95SM1272K	Nod1_Zn1_Htr1_Inh
M1TH95SM1297K	Nod1_Zn1_Htr2_Inh
M1TH95SM1273K	Nod1_Zn2_Htr1_Inh
M1TH95SM1298K	Nod1_Zn2_Htr2_Inh
M1TH95SM1274K	Nod1_Zn3_Htr1_Inh
M1TH95SM1299K	Nod1_Zn3_Htr2_Inh
M1TH95SM1275K	Nod1_Zn4_Htr1_Inh
M1TH95SM1300K	Nod1_Zn4_Htr2_Inh
M1TH95SM1276K	Nod1_Zn5_Htr1_Inh
M1TH95SM1301K	Nod1_Zn5_Htr2_Inh
M1TH95SM1277K	Nod1_Zn6_Htr1_Inh
M1TH95SM1302K	Nod1_Zn6_Htr2_Inh
M1TH95SM1278K	Nod1_Zn7_Htr1_Inh
M1TH95SM1303K	Nod1_Zn7_Htr2_Inh
M1TH95SM1279K	Nod1_Zn8_Htr1_Inh
M1TH95SM1304K	Nod1_Zn8_Htr2_Inh
M1TH95SM1280K	Nod1_Zn9_Htr1_Inh
M1TH95SM1305K	Nod1_Zn9_Htr2_Inh
M1TH95SM1281K	PMA1_Zn1_Htr1_Inh
M1TH95SM1306K	PMA1_Zn1_Htr2_Inh
M1TH95SM1307K	PMA1_Zn2_Htr2_Inh
M1TH95SM1283K	PMA1_Zn3_Htr1_Inh
M1TH95SM1308K	PMA1_Zn3_Htr2_Inh
M1TH95SM1284K	PMA1_Zn4_Htr1_Inh
M1TH95SM1285K	PMA1_Zn5_Htr1_Inh
M1TH95SM1310K	PMA1_Zn5_Htr2_Inh
M1TH95SM1317K	PMA3_Zn1_Htr1_Inh
M1TH95SM1318K	PMA3_Zn2_Htr1_Inh
M1TH95SM1319K	PMA3_Zn3_Htr1_Inh
M1TH95SM1320K	PMA3_Zn4_Htr1_Inh
M1TH95SM1321K	PMA3_Zn5_Htr1_Inh
M1TH95SM1322K	PMA3_Zn1_Htr2_Inh
M1TH95SM1323K	PMA3_Zn2_Htr2_Inh
M1TH95SM1324K	PMA3_Zn3_Htr2_Inh
M1TH95SM1325K	PMA3_Zn4_Htr2_Inh
M1TH95SM1326K	PMA3_Zn5_Htr2_Inh
M1PR95SM2085K	RPCM_N1RS1_C_RPC_05_CBM_N1_Stbd_Pri_1_Op (ECOM)
M1PR95SM2086K	RPCM_N1RS1_C_RPC_06_CBM_N1_Stbd_Pri_2_Op (ECOM)
M1PR95SM2092K	RPCM_N1RS1_C_RPC_12_CBM_N1_Stbd_Sec_1_Op (ECOM)
M1PR95SM2093K	RPCM_N1RS1_C_RPC_13_CBM_N1_Stbd_Sec_2_Op (ECOM)
M1PR95SM2139K	RPCM_N1RS2_A_RPC_05_CBM_N1_Stbd_Pri_3_Op (ECOM)
M1PR95SM2140K	RPCM_N1RS2_A_RPC_06_CBM_N1_Stbd_Pri_4_Op (ECOM)
M1PR95SM2144K	RPCM_N1RS2_A_RPC_10_CBM_N1_Stbd_Sec_3_Op (ECOM)
M1PR95SM2145K	RPCM_N1RS2_A_RPC_11_CBM_N1_Stbd_Sec_4_Op (ECOM)
M1TH95SM1312K	SPDA_Z14B_Htr1_Inh
M1TH95SM1311K	SPDA_Z13B_Htr2_Inh
M1PR95SM2575K	RPCM_Z13B_B_RPC_10_CMG1_EA_Htr1_Op

### Load Shed Tables

M1PR95SM2576K	RPCM_Z13B_B_RPC_11_DDCU_Z13B_Htr-1_Op
M1PR95SM2577K	RPCM_Z13B_B_RPC_12_CMG4_EA_Htr1_Op
M1PR95SM2579K	RPCM_Z13B_B_RPC_14_PCU_Z14B_B_Htr_Op
M1PR95SM2581K	RPCM_Z13B_B_RPC_16_DDCU_Z14B_Htr-2_Op
M1PR95SM2674K	RPCM_Z14B_B_RPC_01_RFG_P_Htr_Op
M1PR95SM2675K	RPCM_Z14B_B_RPC_02_RFG_P_Htr_Op
M1PR95SM2676K	RPCM_Z14B_B_RPC_03_XPDR_P_Htr_Op
M1PR95SM2677K	RPCM_Z14B_B_RPC_04_BSP_P_Htr_Op
M1PR95SM2678K	RPCM_Z14B_B_RPC_05_Ku_Ant_Htr_Op
M1PR95SM2679K	RPCM_Z14B_B_RPC_06_Ku_TRC_Htr_Op
M1TH95SM1286K	SPDA_Z13B_Htr1_Inh
M1TH95SM1287K	SPDA_Z14B_Htr2_Inh
M1PR95SM2683K	RPCM_Z14B_B_RPC_10_CMG2_EA_Htr1_Op
M1PR95SM2684K	RPCM_Z14B_B_RPC_11_DDCU_Z14B_Htr-1_Op
M1PR95SM2685K	RPCM_Z14B_B_RPC_12_CMG3_EA_Htr1_Op
M1PR95SM2687K	RPCM_Z14B_B_RPC_14_PCU_Z13B_B_Htr_Op
M1PR95SM2689K	RPCM_Z14B_B_RPC_16_DDCU_Z13B_Htr-2_Op

## NODE 1 INTERNAL LIGHT LOCATIONS



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